



Australian Government

CPC Construction, Plumbing and Services Training Package

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CPC Construction, Plumbing and Services Training Package

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CPC10120 Certificate I in Construction

Modification History

- Release 4 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.
Minor formatting correction.
- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Change of unit title BSBSUS211 Participate in environmentally sustainable work practices in Elective units to BSBSUS211 Participate in sustainable work practices.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Unit list typographical error corrected in code CPCCWHS2001.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPC10111 Certificate I in Construction.
Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification provides an introduction to the construction industry, its culture, occupations, job roles and workplace expectations. The units of competency cover essential work health and safety requirements, the industrial and work organisation structure, communication skills, work planning, and basic use of tools and materials. The qualification is built around a basic construction project unit that integrates the skills and embeds the facets of employability skills in context.

The qualification is suited to vocational education and training (VET) in Schools programs or learners with no previous connection to the construction industry or relevant employment history.

There are no specific job outcomes to this qualification, but the skills achieved will assist in successfully undertaking a Certificate II pre-vocational program or job outcome qualification or will facilitate entry into an Australian Apprenticeship.

The unit CPCCWHS1001 Prepare to work safely in the construction industry is designed to meet WHS regulatory authority requirements for WHS induction and must be achieved before access to any building and construction work site.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in 11 units of competency:

- 8 core units
- 3 elective units.

The elective units are to be chosen as follows:

- up to 3 units from the elective units below
- one unit from Certificate I or II qualifications in the CPC Training Package or another current Training Package or accredited course, provided the integrity of the AQF alignment is ensured, and it contributes to a valid, industry-supported vocational outcome.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCM1011	Undertake basic estimation and costing
CPCCCM2004*	Handle construction materials
CPCCCM2005*	Use construction tools and equipment
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCVE1011	Undertake a basic construction project
CPCCWHS1001	Prepare to work safely in the construction industry
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

Elective units

BSBSUS211	Participate in sustainable work practices
CPCCCM2006	Apply basic levelling procedures
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM1017	Prepare simple construction sketches
CPCCOM2001*	Read and interpret plans and specifications
CPCCVE1002	Undertake a basic computer design project

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC10120 Certificate I in Construction	CPC10111 Certificate I in Construction	Supersedes and is equivalent to CPC10111 Certificate I in Construction. Updated to meet the Standards for Training Packages 2012.	E

Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC20120 Certificate II in Construction

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Imported unit codes updated in Elective list:

- RIICCM210D Install trench support to RIICCM210E Install trench support
- RIIWMG203D Drain and dewater civil construction site to RIIWMG203E Drain and dewater civil construction sites.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.

Imported unit code corrected in elective list: RIICCM210E Install trench support to RIICCM310D Install trench support.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC20112 Certificate II in Construction. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification provides an occupational outcome and a range of support tasks applicable to the majority of construction work sites.

Occupational titles may include:

- builder's labourer.

The qualification has core units of competency that are required in many Certificate III qualifications. The elective options are structured to allow choice from a range of units aligned at Certificate III level and in total could provide meaningful credit in a construction industry Australian Apprenticeship.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in 15 units of competency:

- 10 core units
- 5 elective units.

The elective units are to be chosen as follows:

- up to 5 units from the elective units below
- one unit may be chosen from Certificate I, II or III qualifications in CPC Training Package or another current Training Package or accredited course, provided the integrity of the AQF alignment is ensured, and they contribute to a valid, industry-supported vocational outcome.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCM2005*	Use construction tools and equipment
CPCCCM2006	Apply basic levelling procedures
CPCCCM2012*	Work safely at heights
CPCCCO2013*	Carry out concreting to simple forms
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

Elective units

CPCCCM2002*	Carry out hand excavation
-------------	---------------------------

CPCCCM2007*	Use explosive power tools
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM2009*	Carry out basic demolition
CPCCRI3001*	Operate personnel and materials hoists
CPCCSF2004*	Place and fix reinforcement materials
RIICCM210E	Install trench support
RIIWHS202E	Enter and work in confined spaces
RIIWHS205E	Control traffic with stop-slow bat
RIIWMG203E	Drain and dewater civil construction site
TLILIC0003	Licence to operate a forklift truck

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC20120 Certificate II in Construction	CPC20112 Certificate II in Construction	Supersedes and is equivalent to CPC20112 Certificate II in Construction. Updated to meet the Standards for Training Packages 2012.	E

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC20220 Certificate II in Construction Pathways

Modification History

- Release 5 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.
- Unit CPCCVE1011 Undertake a basic construction project marked with an asterisk as a prerequisite requirement must be met.
- Release 4 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- Imported unit codes updated in Elective list:
- RIICCM210D Install trench support to RIICCM210E Install trench support
 - RIIWMG203D Drain and dewater civil construction site to RIIWMG203E Drain and dewater civil construction sites.
- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.
- Imported unit code corrected in Group I elective list: RIIWHS205D Control traffic with stop-slow bat to RIIWHS205E Control traffic with stop-slow bat.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Group I: General elective unit list is updated by removing "A" from the unit codes CPCPCM2043 and CPCPRF2022 and adding CPCPCM2055 Work safely on roofs as prerequisite requirement.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPC20211 Certificate II in Construction Pathways. Updated to meet the Standards for Training Packages.

Qualification Description

This qualification provides a pathway to the primary trades in the construction industry with the exception of plumbing. Trade outcomes are predominantly achieved through an Australian Apprenticeship and this qualification allows for inclusion of skills suited for entry to off-site occupations, such as joinery as well as carpentry, bricklaying and other occupations in general construction.

This qualification is designed to introduce learners to the recognised trade callings in the construction industry and provide meaningful credit in a construction industry Australian Apprenticeship.

The qualification has core unit of competency requirements that are required in most Certificate III qualifications. The elective options are structured to allow choice from areas of trade skills as an introduction to a range of occupations.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency in one of the two occupational streams must be achieved.

- **Construction Pathways**

For the award of the *CPC20220 Certificate II in Construction Pathways*, the candidate must demonstrate competency in 10 units of competency:

- 5 core units
- 5 elective units.

Elective units are to be chosen from at least two but no more than four of groups A to I.

One elective may be chosen from any current training package or accredited course as long as it contributes to a valid industry-supported vocational outcome, maintains the AQF level of this qualification, and does not replicate the content of another unit used to achieve this qualification.

- **Remote Area Building**

For the award of the *CPC20220 Certificate II in Construction Pathways (Remote Area Building)*, the candidate must demonstrate competency in a minimum of 10 units of competency:

- 5 core units
- 5 units can be selected from Group I.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCOM1012	Work effectively and sustainably in the Construction Industry
CPCCOM1013	Plan and organise work
CPCCOM1015	Carry out measurements and calculations

- CPCCV1011* Undertake a basic construction project
- CPCCWHS2001 Apply WHS requirements, policies and procedures in the Construction Industry

Elective units

Group A: Brick and blocklaying

- CPCCB2001* Handle and prepare bricklaying and blocklaying materials
- CPCCB2002* Use bricklaying and blocklaying tools and equipment

Group B: Carpentry

- CPCCA2002* Use carpentry tools and equipment
- CPCCA2011* Handle carpentry materials

Group C: Solid plastering (maximum one unit from this group)

- CPCSP2001* Handle solid plastering materials
- CPCSP2002* Use solid plastering tools and equipment

Group D: Wall and floor tiling (maximum one unit from this group)

- CPCCM2013* Undertake basic installation of wall tiles
- CPCWF2002* Use wall and floor tiling tools and equipment

Group E: Waterproofing (maximum one unit from this group)

- CPCWP2001* Handle waterproofing materials
- CPCWP2002* Use waterproofing tools and equipment

Group F: Joinery (maximum one unit from this group)

- CPCCJN2001* Assemble components
- CPCCJN3004* Manufacture and assemble joinery components

Group G: Stonemasonry (maximum one unit from this group)

- CPCCST2006* Identify and use stone products
- CPCCST2007* Use stonemasonry tools, plant and equipment

Group H: Painting and decorating (maximum one unit from this group)

- CPCCPD2011* Handle and store painting and decorating materials
- CPCCPD2012* Use painting and decorating tools and equipment

Group I: General elective units

- CPCCCM1011 Undertake basic estimation and costing
- CPCCCM2004* Handle construction materials
- CPCCCM2006 Apply basic levelling procedures
- CPCCCM2009* Carry out basic demolition
- CPCCCM2012* Work safely at heights
- CPCCCO2013* Carry out concreting to simple forms
- CPCCJN3100* Process materials to produce components using static machines
- CPCCPD3021* Prepare existing coated surfaces for painting
- CPCCPD3022* Apply paint by brush and roller
- CPCCSH2003* Apply and install sealant and sealant devices
- CPCCSP2003* Prepare surfaces for plastering
- CPCCWF3004* Repair wall and floor tiles
- CPCPCM2043 Carry out WHS requirements
- CPCPCM2055 Work safely on roofs

CPCPRF2022*	Select and install roof sheeting and wall cladding
MEM05050*	Perform routine gas metal arc welding
MEM1101	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
RIICCM210E	Install trench support
RIIWHS205E	Control traffic with stop-slow bat
RIIWMG203E	Drain and dewater civil construction site
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace
UEERL0003*	Conduct in-service safety testing of electrical cord connected equipment and cord assemblies

Qualification Mapping Information

CPC Construction, Plumbing and Service Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC20220 Certificate II in Construction Pathways	CPC20211 Certificate II in Construction Pathways	Supersedes and is equivalent to CPC20211 Certificate II in Construction Pathways. Updated to meet the Standards for Training Packages 2012.	E

Links

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CPC20720 Certificate II in Drainage

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to unit title CPCPCM3022 in Elective units.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC20712 Certificate II in Drainage.

Qualification Description

This qualification reflects the role of a drainer, responsible for carrying out installation of below ground stormwater and sub-soil drainage systems, sanitary drainage systems, domestic treatment plants, on-site disposal systems and trench support, locating and clearing blockages and/or installing prefabricated inspection openings and chambers.

Occupational titles could include:

- Drainer.

Completion of this qualification indicates that a person has the practical skills and operational knowledge to perform routine drainage tasks in a defined context, usually working under direct supervision.

This qualification includes units of competency common to other qualifications in the plumbing industry as well as specialist drainage units and can provide a pathway to further learning and work in the plumbing industry.

The plumbing industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or closely simulated workplace environment and this qualification requires all units of competency to be delivered and assessed in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required before entering a construction work site. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory and certification requirements apply to drainage in some states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded this qualification, the candidate must achieve competency in:

- 18 units of competency:
 - 13 core units
 - 5 elective units.

The elective units must ensure the integrity of the AQF alignment and contribute to a valid, industry-supported vocational outcome and are to be chosen as follows:

- 4 elective units must be chosen from electives listed below,
- 1 unit may be chosen from the elective units listed below, or from any relevant nationally endorsed Training Package or accredited course.

An asterisk (*) against a unit code below indicates that the unit has a prerequisite. Please check the unit for information on this. All prerequisites are packaged in the qualification.

Core Units

CPCPCM2039	Carry out interactive workplace communication
CPCPCM2040 *	Read plans, calculate quantities and mark out materials
CPCPCM2041	Work effectively in the plumbing services sector
CPCPCM2043	Carry out WHS requirements
CPCPCM2047 *	Carry out levelling
CPCPCM2054 *	Carry out simple concreting and rendering
CPCPCM3024 *	Prepare simple drawings
CPCPCM3025	Install trench support
CPCPDR2025*	Install stormwater and sub-soil drainage systems and drain work site
CPCPDR2026*	Install prefabricated inspection openings and inspection chambers
CPCPDR3021*	Plan layout and install below ground sanitary drainage systems
CPCPDR3023*	Install on-site domestic wastewater treatment plants and disposal systems
HLTAID011	Provide first aid

Elective Units

CPCCCM2012 *	Work safely at heights
CPCCCST2005*	Carry out load slinging of off-site materials
CPCCWHS200 1	Apply WHS requirements, policies and procedures in the construction industry
CPCPCM2049 *	Cut mild steel using oxy-LPG-acetylene equipment
CPCPCM2052 *	Weld mild steel using oxy-acetylene equipment
CPCPCM3022 *	Weld polymer pipes using fusion method
CPCPDR2021*	Locate and clear blockages
CPCPRF2023*	Collect and store roof water
CPCPSN3025*	Install pre-treatment facilities
CPCPSN3026*	Install sewerage pumpsets
RIICTT306E	Install cure in-place linings for existing pipeline systems
RIIMPO320F	Conduct civil construction excavator operations
RIIWHS202E	Enter and work in confined spaces

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC20720 Certificate II in Drainage	CPC20712 Certificate II in Drainage	Supersedes and is equivalent to CPC20712 Certificate II in Drainage. Updated to meet the Standards for Training	E

		Packages 2012.	
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Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC30120 Certificate III in Shopfitting

Modification History

Release 2 This version first released with CPC Property Services Training Package Release 6.3.

Units:

- CPCCJN3100 Process materials to produce components using static machines
- CPCCWC3004 Install suspended ceilings

marked with an asterisk as a prerequisite requirement must be met.

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPC30116 Certificate III in Shopfitting.
Updated qualification to meet Standards for Training Packages 2012.

Qualification Description

This qualification reflects the role of shopfitters who construct or renovate commercial premises such as retail or office environments. It includes the skills and knowledge required to work safely using tools and equipment and to apply information from plans and drawings to fabricate, assemble and fix shop fronts and install internal units and partitions.

Occupational titles may include:

- shopfitter.

Licensing, legislative or certification requirements may apply to shopfitting in some states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 18 units of competency:
 - 12 core units
 - 6 elective units.

For the elective units:

- a minimum of four units must be selected from Group A
- the remaining two units can be selected from Group A and/or Group B or from any currently endorsed Training Package or accredited course as long as they contribute to a valid, industry-supported vocational outcome and maintain the integrity of the Australian Qualifications Framework (AQF) level of this qualification.

Prerequisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite units must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core Units

CPCCCA2002
* Use carpentry tools and equipment

CPCCCM3004 Identify and apply information in construction plans, drawings and specifications

CPCCCJN3100* Process materials to produce components using static machines

CPCCOM3006 Carry out levelling operations

CPCCWHS20 Apply WHS requirements, policies and procedures in the construction industry
01

CPCSHP3001 Fabricate shopfitting components using CNC machines

CPCSHP3002 Fabricate and assemble shopfront structures

CPCSHP3003 Assemble and install shopfront structures

CPCSHP3004 Assemble internal shopfitting units and prepare for transport

CPCSHP3005 Apply and trim decorative additions to shopfittings and components

CPCSHP3007 Install prefabricated internal shopfitting units^{[[L]]}_{[[SEP]]}

CPCSHP3008 Install internal shop walls and fixtures^{[[L]]}_{[[SEP]]}

Group A: Specialist elective units

- CPCSHP3006 Prepare shopfittings and surfaces and apply liquid finishes
- CPCSHP3009 Demolish shopfronts and bulkheads^[1]_[SEP]
- CPCSHP3010 Prepare shop floors for new coverings
- CPCCCWC3004 Install suspended ceilings
*
- MSFFM3009 Produce manual and computer-aided production drawings
- MSFFM3011 Measure and draw site layout for manufactured furniture products
- MSFFM3019 Set up, operate and maintain automated edge banding machines
- MSFFM3020 Fabricate synthetic solid surface products^[1]_[SEP]
- MSFGG3036 Install commercial glazing products

Group B: General elective units

- BSBESB301 Investigate business opportunities^[1]_[SEP]
- BSBESB407 Manage finances for new business ventures^[1]_[SEP]
- CPCCCM2010 Work safely on scaffolding higher than two metres
- CPCCCM3005 Calculate costs of construction work
- CPCCLHS300 Licence to operate a personnel and materials hoist
1
- CPCWHS3001 Identify construction work hazards and select risk control strategies

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC Construction, Plumbing and Services Training Package Release 4.0	Comments	E/NE
CPC30120 Certificate III in Shopfitting	CPC30116 Certificate III in Shopfitting	Supersedes and is equivalent to CPC30116 Certificate III in	E

		Shopfitting.	
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Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC30216 Certificate III in Signs and Graphics

Modification History

Release 2 This version released with CPP Property Services Training Package Release 11.0.

Imported units updated to current releases.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised qualification replacing superseded non-equivalent CPC32111 Certificate III in Signage.

Qualification Description

This qualification reflects the role of sign manufacturers who design and produce signs and graphics for a range of purposes.

Signs and graphics can be produced using a range of traditional and contemporary techniques, often involving the use of advanced printing software and technology, and a range of methods for illumination and fabrication.

No licensing, legislative, regulatory, or certification requirements apply to this qualification at the time of endorsement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 16 units of competency:
 - 7 core units
 - 9 elective units.

The elective units must ensure the integrity of the AQF alignment and contribute to a valid, industry-supported vocational outcome and are to be chosen as follows:

- all 9 units may be chosen from the elective units listed below
- up to 3 units may be chosen from other CPC Certificate III or Certificate IV qualifications, or another current Training Package or accredited course, provided they

provided they do not duplicate the outcome of another unit chosen for the qualification.

Core units

CPCCSG3001	Design and lay out digital signs for production
CPCCSG3002	Produce and apply vinyl signs
CPCCSG3003	Colour manage signs
CPCCSG3004	Print digital signs
CPCCSG3011	Install LED technology into signs
CPCCSG3012	Fabricate signs
CPCWHS3001	Identify construction work hazards and select risk control strategies

Elective units

AURVTP109	Apply vehicle body film wrapping
CPCCCM2006	Apply basic levelling procedures
CPCCCM2010	Work safely on scaffolding higher than two metres
CPCCCM3001	Operate elevated work platforms up to 11 meters
CPCCCM3003	Work safely around electrical sources, services and assets
CPCCCM3004	Identify and apply information in construction plans, drawings and specifications
CPCCLSF2001	Licence to erect, alter and dismantle scaffolding basic level
CPCCSG3005	Engrave signs
CPCCSG3006	Apply gilding to signs
CPCCSG3007	Paint lines and scrolls
CPCCSG3008	Hand draw chalkboards and showcards
CPCCSG3009	Screen-print signs
CPCCSG3010	Hand render pictorials

CPCCSG3013	Paint letters and decorative effects for signs
CPCCSG3014	Manufacture gas-charged glass-formed illuminated signs
CPCCSG3015	Produce airbrushed signs
CPCCSG3016	Prepare surfaces for signs
CPCCSG3017	Erect and install signs
MEM05049	Perform routine gas tungsten arc welding
MEM05050	Perform routine gas metal arc welding
MSFFF2006	Apply surface coatings by spray gun
MSFFM3022	Set up, operate and maintain computer numerically controlled (CNC) machining and processing centres

Qualification Mapping Information

No equivalent qualification.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC30220 Certificate III in Carpentry

Modification History

Release 4 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

Removal of prerequisite asterisks from:

- CPCCOM1012 Work effectively and sustainably in the construction industry
- CPCCOM1014 Conduct workplace communication

in the unit lists.

Units:

- CPCCJN3100 Process materials to produce components using static machines, and
- CPCCWC3004 Install suspended ceilings

marked with an asterisk as a prerequisite requirement must be met.

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.

Unit code corrected in Group A - Specialist Electives: CPCCCO3048* Construct tilt panels on site to CPCCON3048* Construct tilt panels on site.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Rectified qualification to reflect endorsed version.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to:

- CPC30211 Certificate III in Carpentry.

Supersedes and is not equivalent to:

- CPC32011 Certificate III in Carpentry and Joinery.
- CPC31511 Certificate III in Formwork/Falsework.

Qualification Description

This is a trade qualification for carpenters in residential and commercial workplaces. It includes setting out, manufacturing, constructing, assembling, installing and repairing products made using timber and non-timber materials.

Occupational titles may include:

- Carpenter - Commercial
- Carpenter - Formwork
- Carpenter - Residential

State and territory jurisdictions may have different licensing, legislative, regulatory or certification requirements. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

This qualification is suitable for an Australian apprenticeship pathway.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 34 units of competency:
 - 27 core units
 - 7 electives
- a minimum of five units must be selected from Group A
- the remaining can be selected from Group A or Group B
- a maximum of two units can be selected from any group or current training package, as long as it contributes to a valid, industry-supported vocational outcome and maintains the AQF level of this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core Units

- CPCCCA2002* Use carpentry tools and equipment
- CPCCCA2011* Handle carpentry materials
- CPCCCA3001* Carry out general demolition of minor building structures

CPCCCA3002*	Carry out setting out
CPCCCA3003*	Install flooring systems
CPCCCA3004*	Construct and erect wall frames
CPCCCA3005*	Construct ceiling frames
CPCCCA3006*	Erect roof trusses
CPCCCA3007*	Construct pitched roofs
CPCCCA3008*	Construct eaves
CPCCCA3010*	Install windows and doors
CPCCCA3016*	Construct, assemble and install timber external stairs
CPCCCA3017*	Install exterior cladding
CPCCCA3024*	Install lining, panelling and moulding
CPCCCA3025*	Read and interpret plans, specifications and drawings for carpentry work
CPCCCA3028*	Erect and dismantle formwork for footings and slabs on ground
CPCCCM2006	Apply basic levelling procedures
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM2012*	Work safely at heights
CPCCCO2013*	Carry out concreting to simple forms
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM3001	Perform construction calculations to determine carpentry material requirements
CPCCOM3006	Carry out levelling operations
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
CPCWHS3001	Identify construction work hazards and select risk control strategies

Group A - Specialist Electives

CPCCCA3009*	Construct advanced roofs
CPCCCA3012*	Frame and fit wet area fixtures
CPCCCA3014*	Construct and install bulkheads
CPCCCA3018*	Construct, erect and dismantle formwork for stairs and ramps
CPCCCA3019*	Erect and dismantle formwork to suspended slabs, columns, beams and walls
CPCCCA3020*	Erect and dismantle jump-form formwork
CPCCCA3022*	Install curtain walling
CPCCCA3027*	Set up, operate and maintain indirect action powder-actuated power tools
CPCCCM2002*	Carry out hand excavation
CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCCJN3003*	Manufacture components for doors, windows and frames
CPCCJN3004*	Manufacture and assemble joinery components
CPCCJN3100*	Process materials to produce components using static machines
CPCCON3048*	Construct tilt panels on site
CPCCSF2004*	Place and fix reinforcement materials
CPCCWC3003*	Install dry wall passive fire-rated systems
CPCCWC3004*	Install suspended ceilings

Group B - General Electives

CPCCCA3011*	Refurbish timber sashes to window frames
CPCCCA3026*	Assemble partitions
CPCCCM3005	Calculate costs of construction work
CPCCLSF2001	License to erect, alter and dismantle scaffolding basic level

CPCCOM1013	Plan and organise work
CPCCPB3001*	Fix standard plasterboard wall sheets
CPCCPB3002*	Fix standard plasterboard ceiling sheets
CPCCSF2005*	Arc weld reinforcement steel
CPCCSF3002*	Carry out monostrand post-tensioning
CPCCSF3003*	Carry out multistrand post-tensioning
CPCCSF3004*	Carry out stressbar post-tensioning
CPCCST4001	Prepare to undertake the heritage restoration process
CPCCST4002	Undertake the heritage restoration process
CPCPCM2043	Carry out WHS requirements
CPCPCM2052*	Weld mild steel using oxy-acetylene equipment
CPCPCM2053*	Weld using manual metal arc welding equipment

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0.	CPC08 Construction, Plumbing and Services Training Package	Comments	E/ NE
CPC30220 Certificate III in Carpentry	CPC30211 Certificate III in Carpentry	Supersedes and is equivalent to CPC30211 Certificate III in Carpentry.	E
CPC30220 Certificate III in Carpentry	CPC32011 Certificate III in Carpentry and Joinery	Supersedes and is not equivalent to CPC32011 Certificate III in Carpentry and Joinery.	NE
CPC30220 Certificate III in Carpentry	CPC31511 Certificate III in Formwork/Falsework	Supersedes and is not equivalent to CPC31511 Certificate III in Formwork/Falsework.	NE

Links

An Implementation Guide to this Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC30320 Certificate III in Concreting

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC30318 Certificate III in Concreting.

Qualification Description

This is a qualification for concreters working in concreting operations on residential and commercial projects.

Occupational titles include:

- concreter
- concrete tilt panel fabricator.

This qualification has core unit of competency requirements that cover common skills for the construction industry, as well as a specialist field of work in concreting.

The construction industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in an actual workplace or very closely simulated workplace environment, and this qualification requires all units of competency to be delivered in this context.

Licensing, legislative, regulatory or certification requirements apply to concreting in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 22 units of competency:
 - 17 core units
 - 5 elective units.

For the elective units:

- 3 units must be selected from Group A
- the remaining 2 elective units may be selected from Group A and/or Group B or from any currently endorsed Training Package or accredited course at Certificate III or Certificate IV level.

Prerequisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCA3002*	Carry out setting out
CPCCCA3028*	Erect and dismantle formwork for footings and slabs on ground
CPCCCM2002*	Carry out hand excavation
CPCCCM2006	Apply basic levelling procedures
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCON2021*	Handle concreting materials and components
CPCCON2022*	Select, use and maintain concreting plant, tools and equipment
CPCCON3035*	Determine concrete supply requirements
CPCCON3041*	Place concrete
CPCCON3042*	Finish concrete
CPCCON3043*	Cure concrete
CPCCSF2004*	Place and fix reinforcement materials
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

Elective units**Group A: Specialist elective units**

CPCCON3036*	Plan concrete work and brief team
CPCCON3044*	Apply decorative finishes to concrete
CPCCON3046*	Repair and rectify concrete
CPCCON3047*	Cut concrete
CPCCON3048*	Construct tilt panels on site
CPCCON3049*	Apply and finish sprayed concrete
CPCCON3050*	Carry out high performance concreting
CPCCON3051*	Conduct off-form vertical concrete operations
CPCCON3053*	Slump test concrete
CPCCON3054*	Operate concrete agitator trucks
CPCCON3055*	Install topping slabs
CPCCON3056*	Conduct concrete pump delivery operations
CPCCON3057*	Core concrete

Group B: General elective units

CPCCCM2007*	Use explosive power tools
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM2012*	Work safely at heights
CPCCLBM3001	Licence to operate a concrete placing boom
CPCCOM1016	Identify requirements for safe precast and tilt-up work
CPCCSF2003*	Cut and bend materials using oxy-LPG equipment
CPCCSF3001*	Apply reinforcement schedule

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC Construction, Plumbing and Services Training Package Release 4.0	Comments	E/NE
CPC30320 Certificate III in Concreting	CPC30318 Certificate III in Concreting	Supersedes and is equivalent to CPC30318 Certificate III in Concreting.	E

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC30420 Certificate III in Demolition

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Imported unit code in Elective units updated from RIIRTM203D Work as a safety observer/spotter to RIIRTM203E Work as a safety observer/spotter.

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPC30413 Certificate III in Demolition. Updated to the Standards for Training Packages 2012.

Qualification Description

This qualification is designed to meet the needs of specialist demolition workers who dismantle and demolish public, residential, commercial and industrial structures of all types, and process the resulting materials for salvage, recycling and waste disposal.

Occupational titles could include:

- Demolition worker
- Demolition plant operator
- Demolition team leader.

Licensing, legislative, regulatory or certification requirements for demolition work differ between states and territories. Please consult with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 20 units of competency:
 - 11 core units

- 9 elective units.

The elective units can be selected from any of the groups listed below. Two elective units can be selected from any training package or accredited course, as long as they contribute to a valid, industry-supported vocational outcome and supports the AQF level of this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCM2012*	Work safely at heights
CPCCCDE3016*	Identify hazards on demolition sites and apply risk management strategies
CPCCCDE3017*	Select and use hand tools and equipment for demolition tasks
CPCCCDE3018*	Select and use small plant and equipment for demolition tasks
CPCCCDE3019*	Demolish small buildings and structures using hand tools and small plant and equipment
CPCCCDE3020*	Select and use tools and equipment for hot work in the demolition industry
CPCCCDE3027	Read and interpret demolition site plans and drawings
CPCCCOM1015	Carry out measurements and calculations
CPCCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
TLID1001	Shift materials safely using manual handling methods
TLID2003	Handle dangerous goods/hazardous substances

Elective units

Group A - General electives

CPCCCDE3014*	Remove non-friable asbestos
CPCCCDE3015*	Remove friable asbestos

CPCCSF2003*	Cut and bend materials using oxy-LPG equipment
RIIWH5202E	Enter and work in confined spaces
RIIWH5205E	Control traffic with stop-slow bat
RIIWH5302E	Implement traffic management plan
RIIRIS202E	Respond to site based spills
RIIRTM203E	Work as a safety observer/spotter

Group B - Plant operation field of work

CPCCCDE3021*	Operate demolition material crushing plants
CPCCCDE3022	Manage demolition recyclable, waste materials and contaminated soil using load shifting equipment
CPCCCDE3023	Operate skid steer loaders at ground level on demolition sites
CPCCCDE3024	Operate mobile plant on suspended floors on demolition sites
CPCCCDE3025	Operate remote-controlled plant on demolition sites
CPCCCDE3026	Operate excavators at ground level to demolish building elements
RIIHAN309F	Conduct telescopic materials handler operations
RIIMPO320F	Conduct civil construction excavator operations

Group C - Licensing field of work

CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCCLDG3001	Licence to perform dogging
CPCCLHS3001	Licence to operate a personnel and materials hoist
CPCCLRG3001*	Licence to perform rigging basic level
CPCCLRG3002*	Licence to perform rigging intermediate level
CPCCLSF2001	Licence to erect, alter and dismantle scaffolding basic level
CPCCLSF3001*	Licence to erect, alter and dismantle scaffolding intermediate level
CPCCLSF4001*	Licence to erect, alter and dismantle scaffolding advanced level

TLILIC0003	Licence to operate a forklift truck
TLILIC0005	Licence to operate a boom-type elevating work platform (boom length 11 metres or more)

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC30420 Certificate III in Demolition	CPC30413 Certificate III in Demolition	Supersedes and is equivalent to CPC30413 Certificate III in Demolition. Updated to meet the Standards for Training Packages 2012.	E

Links

An Implementation Guide to this Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC30620 Certificate III in Painting and Decorating

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error in unit code corrected for clarity.
- Release 1 This version first released with CPC Property Services Training Package Release 5.0.
Supersedes and is equivalent to CPC30611 Certificate III in Painting and Decorating. Minor changes to the packaging rules. Minor unit title changes. Updated to the Standards for Training Packages 2012.

Qualification Description

This qualification provides a trade outcome in painting and decorating for residential and commercial construction work.

Occupational titles may include:

- Painter and Decorator.

Licensing, legislative and regulatory or certification requirements for painting and decorating work differ between States and Territories. Please consult with the relevant regulatory authority.

This qualification is suitable for an Australian Apprenticeship pathway.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 29 units of competency:
 - 26 core units
 - 3 elective units.

Elective units of competency can be selected as follows:

- 3 from the listed electives

or

- 2 from listed electives and 1 from any endorsed Training Package or accredited course, as long as it contributes to a valid, industry supported vocational outcome and supports the AQF level of this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit/s must be assessed before assessment of any unit of competency with an asterisk. All prerequisite requirements are packaged in the qualification.

Core units

- CPCCCM2008* Erect and dismantle restricted height scaffolding
- CPCCCM2012* Work safely at heights
- CPCCCM3001 Operate elevated work platforms up to 11 metres
- CPCCCM3005 Calculate costs of construction work
- CPCCOM1012 Work effectively and sustainably in the construction industry
- CPCCOM1013 Plan and organise work
- CPCCOM1014 Conduct workplace communication
- CPCCOM1015 Carry out measurements and calculations
- CPCCOM2001* Read and interpret plans and specifications
- CPCCPB3026* Erect and maintain trestle and plank systems
- CPCCPD2011* Handle and store painting and decorating materials
- CPCCPD2012* Use painting and decorating tools and equipment
- CPCCPD2013* Remove and replace doors and door and window components
- CPCCPD3021* Prepare existing coated surface for painting
- CPCCPD3022* Apply paint by brush and roller
- CPCCPD3023* Apply texture coat paint finishes by brush, roller and spray

- CPCCPD3024* Apply paint by spray
- CPCCPD3025* Match specific paint colours
- CPCCPD3026* Apply stains and clear timber finishes
- CPCCPD3027* Remove and apply wallpaper
- CPCCPD3028* Apply decorative paint finishes
- CPCCPD3030* Apply protective paint coating systems
- CPCCPD3031* Work safely with lead-painted surfaces in the painting industry
- CPCCPD3035* Prepare uncoated surfaces for painting
- CPCCPD3036* Work safely to encapsulate non-friable asbestos in the painting industry
- CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Elective units

- BSBESB301 Investigate micro business opportunities
- BSBESB303 Organise finances for new business venture
- CPCCPD3029* Remove graffiti and apply anti-graffiti coatings
- CPCCPD3032* Apply advanced wall coverings
- CPCCPD3033* Apply intumescent coatings
- CPCCPD3034* Apply advanced decorative paint finishes
- CPCCSP3003* Apply trowelled texture coat finishes
- MSFID4016 Design colour schemes for interior and exterior spaces

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package	CPC08 Construction, Plumbing and Services Training Package	Comments	E/ NE

Release 5.0			
CPC30620 Certificate III in Painting and Decorating	CPC30611 Certificate III in Painting and Decorating	Supersedes and is equivalent to CPC30611 Certificate III in Painting and Decorating. Minor changes to the packaging rules. Minor unit title changes. Updated to the Standards for Training Packages 2012.	E

Links

An Implementation Guide to this Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC30720 Certificate III in Rigging

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in unit code corrected for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC30711 Certificate III in Rigging. Updated to meet the Standards for Training Packages.

Qualification Description

This qualification reflects the role of individuals working the area of rigging and dogging in the building and construction industry.

Occupational titles can include rigger and dogger.

The qualification includes units of competency that cover common skills and knowledge for the building and construction industry, as well as those that are more specific to the occupations of a dogger and rigger. Due to the high-risk nature of the job role, the qualification provides a strong focus on safety.

This is a licensed occupation. Users should check requirements with their relevant licensing authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 19 units of competency:
 - 12 core units
 - 7 elective units.

The elective units must be selected as follows:

- 6 units must be selected from the list of elective units below
- 1 unit can be selected from the list of elective units below or from any current training package or accredited course where the unit is packaged in an Australian Qualifications Framework (AQF) Certificate III or Certificate IV qualification that maintains the integrity of the AQF level of this qualification, contributes to a valid, industry-supported vocational outcome, and does not duplicate the outcome of another unit used to achieve this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit/s must be assessed before assessment of any unit of competency with an asterisk. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCM2012*	Work safely at heights
CPCCCM3003	Work safely around electrical sources, services and assets
CPCCLDG3001	Licence to perform dogging
CPCCLRG3001*	Licence to perform rigging basic level
CPCCLRG3002*	Licence to perform rigging intermediate level
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
TLILIC0005	Licence to operate a boom-type elevating work platform (boom length 11 metres or more)

Elective units

CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM3001	Operate elevated work platforms up to 11 metres

CPCCCM3002*	Operate a truck-mounted loading crane
CPCCCDO2011*	Handle and position dogging tools and equipment
CPCCCDO3011*	Perform dogging
CPCCLHS3001	Licence to operate a personnel and materials hoist
CPCCLHS3002	Licence to operate a materials hoist
CPCCLRG4001*	Licence to perform rigging advanced level
CPCCON3052*	Conduct concrete boom delivery operations
CPCCRI3012*	Perform basic rigging
CPCCRI3013*	Perform intermediate rigging
CPCCRI3014*	Perform advanced structural steel erection
CPCCRI3015*	Perform advanced tilt-up slab erection
CPCCRI3016*	Perform advanced tower crane erection
CUASTA403	Operate flying systems
RIIHAN208E	Perform dogging
RIIHAN209E	Perform basic rigging
RIIHAN301E	Operate elevating work platform
RIIWHS202E	Enter and work in confined spaces
TLILIC0003	Licence to operate a forklift truck
TLILIC0008	Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC Construction, Plumbing and Services Training Package Release 4.0	Comments	E/NE
CPC30720 Certificate	CPC30711 Certificate	Supersedes and is equivalent to	E

III in Rigging	III in Rigging	CPC30711 Certificate III in Rigging. Updated to meet the Standards for Training Packages.	
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Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC30820 Certificate III in Roof Tiling

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent CPC30812 Certificate III in Roof Tiling. Updated to meet the Standards for Training Packages.

Qualification Description

This qualification provides a trade outcome in roof tiling for residential and commercial construction work. Roof tilers create a waterproof barrier between the exterior and the interior of a home or other building. The qualification has core unit of competency requirements that cover common skills for the construction industry, as well as the specialist field of work, roof tiling. Roof tilers create a waterproof barrier between the exterior and interior of a home or other building.

Occupational titles may include:

- Roof tiler.

State and territory jurisdictions may have different licensing, legislative, regulatory or certification requirements. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

This qualification is suitable for an Australian apprenticeship pathway.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 17 units of competency:
 - 14 core units
 - 3 elective units.

Electives must be selected as follows:

- all three units from the electives listed below, or
- two units from the electives listed below, plus one unit selected from any current training package or accredited course as long as it contributes to a valid, industry-supported vocational outcome, maintains the integrity of the AQF level of this qualification and does not duplicate the outcome of another unit used to achieve this qualification.

Prerequisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCRT2001*	Handle roof tiling materials
CPCCRT2002*	Use roof tiling tools and equipment
CPCCRT3001*	Tile regular roofs
CPCCRT3002*	Tile irregular roofs
CPCCRT3003*	Repair and replace valleys, valley irons and flashings
CPCCRT3004*	Repair and renovate tile roofs
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
CPCPCM2043	Carry out WHS requirements
CPCPCM2055*	Work safely on roofs

Elective units

BSBESB301	Investigate business opportunities
BSBESB407	Manage finances for new business ventures
CPCCPD3030*	Apply protective paint coating systems
CPCCRT3005*	Slate a roof
CPCCRT3006*	Fix shingles to roofs and facades
CPCCCM2007*	Use explosive power tools
CPCCCM2012*	Work safely at heights
CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCCCSC2002*	Erect and dismantle basic scaffolding

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC30820 Certificate III in Roof Tiling	CPC30812 Certificate III in Roof Tiling	Supersedes and is equivalent CPC30812 Certificate III in Roof Tiling. Updated to meet the Standards for Training Packages 2012.	E

Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>.

CPC30920 Certificate III in Scaffolding

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in unit code corrected for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC30911 Certificate III in Scaffolding.
Updated to meet the Standards for Training Packages.

Qualification Description

This qualification reflects the role of individuals working in the area of scaffolding operations in the residential and commercial construction industry.

Occupational titles include scaffolder.

This is a licensed occupation. Users should check requirements with their relevant licensing authority.

The qualification includes units of competency that cover common skills and knowledge for the building and construction industry, as well as those that are more specific to scaffolding work.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 14 units of competency:
 - 10 core units
 - 4 elective units.

Elective units must be selected as follows:

- 3 units must be selected from the list of elective units below
- 1 unit can be selected from the list of elective units below or from any current training package or accredited course where the unit is packaged in an Australian Qualifications Framework (AQF) Certificate III or Certificate IV qualification that maintains the integrity of the AQF level of this qualification, contributes to a valid, industry-supported vocational outcome, and does not duplicate the outcome of another unit used to achieve this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit/s must be assessed before assessment of any unit of competency with an asterisk. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCM2006	Apply basic levelling procedures
CPCCLSF2001	Licence to erect, alter and dismantle scaffolding basic level
CPCCLSF3001*	Licence to erect, alter and dismantle scaffolding intermediate level
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCSC2001*	Handle and position scaffolding tools, equipment and components
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

Elective units

BSBESB301	Investigate business opportunities
BSBESB407	Manage finances for new business ventures
CPCCCM2007*	Use explosive power tools
CPCCCM2012*	Work safely at heights
CPCCCM3001	Operate elevated work platforms up to 11 metres

CPCCCM3002*	Operate a truck-mounted loading crane
CPCCLDG3001	Licence to perform dogging
CPCCLSF4001*	Licence to erect, alter and dismantle scaffolding advanced level
CPCCRI3001*	Operate personnel and materials hoists
CPCCCSC2002*	Erect and dismantle basic scaffolding
CPCCCSC3001*	Erect and dismantle intermediate scaffolding
CPCCSF2003*	Cut and bend materials using oxy-LPG equipment
RIIWHS302E	Implement traffic management plan
TLILIC0003	Licence to operate a forklift truck

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC Construction, Plumbing and Services Training Package Release 4.0	Comments	E/NE
CPC30920 Certificate III in Scaffolding	CPC30911 Certificate III in Scaffolding	Supersedes and is equivalent to CPC30911 Certificate III in Scaffolding. Updated to meet the Standards for Training Packages.	E

Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC31020 Certificate III in Solid Plastering

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3
- Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPC31011 Certificate III in Solid Plastering. Updated to meet the Standards for Training Packages.

Qualification Description

This qualification provides a trade outcome in solid plastering for residential and commercial work. The qualification has core unit of competency requirements that cover common skills for the construction industry, as well as the specialist field of work, solid plastering. Solid plasterers apply plaster, cement and other mixtures to walls to create smooth or decorative finishes to interior walls and to render to exterior walls.

Occupational titles may include:

- Solid Plasterer
- Renderer.

State and territory jurisdictions may have different licensing, legislative, regulatory or certification requirements. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

This qualification is suitable for an Australian apprenticeship pathway.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 20 units of competency:
 - 15 core units
 - 5 elective units.

Electives are to be selected as follows:

- all five units from the electives listed below, or
- four units from the electives listed below, plus one unit selected from any current training package or accredited course as long as it contributes to a valid, industry-supported vocational outcome, maintains the integrity of the AQF level of this qualification and does not duplicate the outcome of another unit used to achieve this qualification.

Pre-requisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCM2006	Apply basic levelling procedures
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCSP2001*	Handle solid plastering materials
CPCCSP2002*	Use solid plastering tools and equipment
CPCCSP2003*	Prepare surfaces for plastering
CPCCSP3001*	Apply float and render to straight and curved surfaces
CPCCSP3002*	Apply set coats
CPCCSP3003*	Apply trowelled texture coat finishes
CPCCSP3004*	Restore and renovate solid plasterwork
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

Elective units

BSBESB301	Investigate business opportunities
BSBESB407	Manage finances for new business ventures
CPCCCM2007*	Use explosive power tools
CPCCCM2012*	Work safely at heights
CPCCCM3001	Operate elevated work platforms to 11 metres
CPCCCO2013*	Carry out concreting to simple forms
CPCCPB3015*	Install acoustic and thermal environmental protection systems
CPCCPB3026*	Erect and maintain trestle and plank systems
CPCCSP3005*	Install pre-cast decorative mouldings
CPCCSP3006*	Install cast plaster blockwork and wall panels
CPCCSP3007*	Apply plaster by projection machine
CPCCSP3008*	Carry out concrete construction and wall sheet panelling

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC31020 Certificate III in Solid Plastering	CPC31011 Certificate III in Solid Plastering	Supersedes and is equivalent to CPC31011 Certificate III in Solid Plastering. Updated to meet the Standards for Training Packages 2012.	E

Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC31120 Certificate III in Steelfixing

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in unit code corrected for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC31111 Certificate III in Steelfixing.
Updated to meet the Standards for Training Packages.

Qualification Description

This qualification reflects the role of individuals working in the area of steelfixing in the building and construction industry.

Occupational titles include steelfixer.

The qualification includes units of competency that cover common skills and knowledge for the building and construction industry, as well as those that are more specific to steelfixing work.

This is a licensed occupation. Users should check requirements with their relevant licensing authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification competency must be demonstrated in:

- 17 units of competency:
 - 14 core units
 - 3 elective units.

Elective units must be selected as follows:

- 2 units must be selected from the list of elective units below
- 1 unit can be selected from the list of elective units below or from any current training package or accredited course where the unit is packaged in an Australian Qualifications Framework (AQF) Certificate III or Certificate IV qualification that maintains the integrity of the AQF level of this qualification, contributes to a valid, industry-supported vocational outcome, and does not duplicate the outcomes of another unit used to achieve this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit/s must be assessed before assessment of any unit of competency with an asterisk.

Core units

CPCCCM2006	Apply basic levelling procedures
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCSF2001*	Handle steelfixing materials
CPCCSF2002*	Use steelfixing tools and equipment
CPCCSF2003*	Cut and bend materials using oxy-LPG equipment
CPCCSF2004*	Place and fix reinforcement materials
CPCCSF2005*	Arc weld reinforcement steel
CPCCSF2006*	Machine-cut reinforcement materials
CPCCSF3001*	Apply reinforcement schedule
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

Elective units

BSBESB301	Investigate business opportunities
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BSBESB407	Manage finances for new business ventures
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCO2014*	Carry out concrete work
CPCCSF2007*	Splice and anchor using mechanical methods
CPCCSF3002*	Carry out monostrand post-tensioning
CPCCSF3003*	Carry out multistrand post-tensioning
CPCCSF3004*	Carry out stressbar post-tensioning
CPCPCM2053*	Weld using manual metal arc welding equipment
RIIWHS202E	Enter and work in confined spaces

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC Construction, Plumbing and Services Training Package Release 4.0	Comments	E/NE
CPC31120 Certificate III in Steelfixing	CPC31111 Certificate III in Steelfixing	Supersedes and is equivalent to CPC31111 Certificate III in Steelfixing. Updated to meet the Standards for Training Packages 2012.	E

Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC31220 Certificate III in Wall and Ceiling Lining

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.
- Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.
- Unit code corrected in elective list: CPCSH3007 Install prefabricated internal shopfitting units to CPCSH3007 Install prefabricated internal shopfitting units.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPC31211 Certificate III in Wall and Ceiling Lining. Updated to meet the Standards for Training Packages.

Qualification Description

This qualification provides a trade outcome in wall and ceiling lining for residential and commercial construction work. The qualification has core unit of competency requirements that cover common skills for the construction industry, as well as the specialist field of work wall and ceiling liner. Wall and ceiling liners apply and fix linings for non-structural walls and ceilings.

Occupational titles may include:

- Wall and ceiling liner
- Drywaller
- Plasterer.

State and territory jurisdictions may have different licensing, legislative, regulatory or certification requirements. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

This qualification is suitable for an Australian apprenticeship pathway.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 29 units of competency:
 - 22 core units
 - 7 elective units.

Electives must be selected as follows:

- all seven units from the electives listed below, or
- five units from the electives listed below, plus two units selected from any current training package or accredited course as long as they contribute to a valid, industry-supported vocational outcome, maintain the integrity of the AQF level of this qualification and do not duplicate the outcome of another unit used to achieve this qualification.

Prerequisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCA3014*	Construct and install bulkheads
CPCCCA3026*	Assemble partitions
CPCCCM2012*	Work safely at heights
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCPB3001*	Fix standard plasterboard wall sheets
CPCCPB3002*	Fix standard plasterboard ceiling sheets

CPCCPB3003*	Fix battens
CPCCPB3004*	Fix wet area sheets
CPCCPB3005*	Fix ceiling sheets to external protected areas
CPCCPB3006*	Fix fibre cement board
CPCCPB3007*	Apply levels of finish standards to planning and inspection of own work
CPCCPB3008*	Mix plastering compounds
CPCCPB3009*	Finish plasterboard joints manually
CPCCPB3010*	Manually sand plaster work
CPCCPB3012*	Cut and fix paper-faced cornices
CPCCWC3003*	Install dry wall passive fire-rated systems
CPCCWC3004*	Install suspended ceilings
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

Elective units

BSBESB301	Investigate business opportunities
BSBESB407	Manage finances for new business ventures
CPCCCA3001*	Carry out general demolition of minor building structures
CPCCCA3010*	Install windows and doors
CPCCCM2006	Apply basic levelling procedures
CPCCCM2007*	Use explosive power tools
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCCPB3014*	Install bulk insulation and pliable membrane products
CPCCPB3015*	Install acoustic and thermal environmental protection systems
CPCCPB3016*	Install and finish columns

CPCCPB3017*	Rectify faults in drywall applications
CPCCPB3018*	Use vacuum and electric sanding equipment to finish plaster work
CPCCPB3019*	Inspect equipment for serviceability
CPCCPB3020*	Match, mitre and install cast ornamental cornices
CPCCPB3021*	Install and fix residential acoustic plaster products
CPCCPB3022*	Use mechanical jointing equipment to finish joints
CPCCPB3027*	Install ceiling insulation products
CPCCSP3003*	Apply trowelled texture coat finishes
CPCCSP3005*	Install pre-cast decorative mouldings
CPCCWC2001*	Complete penetrations and flashings
CPCCWC3001*	Install and finish plasterboard and fibre cement sheeting to curved wall and ceiling substrates
CPCCWC3002*	Install and finish plasterboard and fibre cement sheeting to arch substrates
CPCSH3007*	Install prefabricated internal shopfitting units

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC31220 Certificate III in Wall and Ceiling Lining	CPC31211 Certificate III in Wall and Ceiling Lining	Supersedes and is equivalent to CPC31211 Certificate III in Wall and Ceiling Lining. Updated to meet the Standards for Training Packages 2012.	E

Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC31320 Certificate III in Wall and Floor Tiling

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

Core unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC31311 Certificate III in Wall and Floor Tiling. Updated to meet the Standards for Training Packages.

Qualification Description

This qualification provides a trade outcome in wall and floor tiling for residential and commercial construction work. The qualification has core unit of competency requirements that cover common skills for the construction industry, as well as the specialist field of work, wall and floor tiling. Tilers work with materials like ceramic, glass, slate, marble and clay. They cut these materials and lay tiles on walls and floors, both interior and exterior. They may also add decorative touches to their basic work.

Occupational titles may include:

- Tiler
- Wall and Floor tiler.

State and territory jurisdictions may have different licensing, legislative, regulatory or certification requirements. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

This qualification is suitable for an Australian apprenticeship pathway.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 20 units of competency:
 - 17 core units
 - 3 elective units.

Electives must be selected as follows:

- all three units from the electives listed below, or
- two units from the electives listed below, plus one unit selected from any current training package or accredited course as long as it contributes to a valid, industry-supported vocational outcome, maintains the integrity of the AQF level of this qualification and does not duplicate the outcome of another unit used to achieve this qualification.

Prerequisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCM2006	Apply basic levelling procedures
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCWF2001*	Handle wall and floor tiling materials
CPCCWF2002*	Use wall and floor tiling tools and equipment
CPCCWF3001*	Prepare surfaces for tiling application
CPCCWF3002*	Install floor tiles
CPCCWF3003*	Install wall tiles
CPCCWF3004*	Repair wall and floor tiling
CPCCWF3005*	Install decorative tiling
CPCCWF3006*	Install mosaic tiling

- CPCCFWF3007* Tile curved surfaces
- CPCCFWF3009* Apply waterproofing for wall and floor tiling
- CPCCFWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Elective units

- BSBESB301 Investigate business opportunities
- BSBESB407 Manage finances for new business ventures
- CPCCFM2008* Erect and dismantle restricted height scaffolding
- CPCCFM2009* Carry out basic demolition
- CPCCFM2012* Work safely at heights
- CPCCFM3001 Operate elevated work platforms up to 11 metres
- CPCCFM2013* Carry out concreting to simple forms
- CPCCFPB3004 Fix wet area sheets
- CPCCFWF3008 Tile pools and spas

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC31320 Certificate III in Wall and Floor Tiling	CPC31311 Certificate III in Wall and Floor Tiling	Supersedes and is equivalent to CPC31311 Certificate III in Wall and Floor Tiling. Updated to meet the Standards for Training Packages.	E

Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC31420 Certificate III in Construction Waterproofing

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

- Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.
- Unit CPCCCM2012 Work safely at heights added to the metadata unit grid.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC31411 Certificate III in Construction Waterproofing. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification is designed to meet the needs of workers who undertake waterproofing for residential and commercial construction work. The qualification has core unit of competency requirements that cover common skills for the construction industry, as well as the specialist field of work, construction waterproofing. Waterproofers apply membranes and special coatings to protect contents and the structural integrity of buildings.

Occupational titles may include:

- Waterproofer.

State and territory jurisdictions may have different licensing, legislative, regulatory or certification requirements. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 19 units of competency:

- 14 core units
- 5 elective units.

Electives must be selected as follows:

- all five units from the electives listed below, or
- two units from the electives listed below, plus three units selected from any current training package or accredited course as long as they contribute to a valid, industry-supported vocational outcome, maintain the integrity of the AQF level of this qualification and do not duplicate the outcome of another unit used to achieve this qualification.

Prerequisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

- CPCCOM1012 Work effectively and sustainably in the construction industry
- CPCCOM1013 Plan and organise work
- CPCCOM1014 Conduct workplace communication
- CPCCOM1015 Carry out measurements and calculations
- CPCCOM2001* Read and interpret plans and specifications
- CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry
- CPCCWP2001* Handle waterproofing materials
- CPCCWP2002* Use waterproofing tools and equipment
- CPCCWP2004* Prepare surfaces for waterproofing application
- CPCCWP3001* Apply waterproofing process to below-ground level wet areas
- CPCCWP3002* Apply waterproofing process to internal wet areas
- CPCCWP3003* Apply waterproofing process to above-ground external wet areas
- CPCCWP3004* Apply waterproofing remedial processes
- CPCCWP3005* Assess construction waterproofing process

Elective units

BSBESB301	Investigate business opportunities
BSBESB407	Manage finances for new business ventures
CPCCCA3012*	Frame and fit wet area fixtures
CPCCCM2002*	Carry out hand excavation
CPCCCM2006	Apply basic levelling procedures
CPCCCM2007*	Use explosive power tools
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM2009*	Carry out basic demolition
CPCCCM2012*	Work safely at heights
CPCCCM3001*	Operate elevated work platforms up to 11 metres
CPCCCO2013*	Carry out concreting to simple forms

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC31420 Certificate III in Construction Waterproofing	CPC31411 Certificate III in Construction Waterproofing	Supersedes and is equivalent to CPC31411 Certificate III in Construction Waterproofing. Updated to meet the Standards for Training Packages 2012.	E

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC31920 Certificate III in Joinery

Modification History

Release 3 This version first released with CPC Property Services Training Package Release 6.3.

Removal of prerequisite asterisks from

- CPCCOM1012 Work effectively and sustainably in the construction industry
- CPCCOM1013 Plan and organise work and
- CPCCOM1014 Conduct workplace communication.

Units:

- CPCCCA3011 Refurbish timber sashes to window frames
- CPCCOM2001 Read and interpret plans and specifications

marked with an asterisk as a prerequisite requirement must be met.

Release 2 This version first released with CPC Property Services Training Package Release 6.1.

Unit codes corrected in Group B - General Electives list:

- CPCCSH3001 Fabricate shopfitting components using CNC machines to
CPCSHP3001 Fabricate shopfitting components using CNC machines
- CPCCSH3005 Apply and trim decorative additions to shopfitting and
components to CPCSHP3005 Apply and trim decorative additions to
shopfittings and components
- CPCCSH3006 - Prepare shopfittings and surfaces and apply liquid finishes to
CPCSHP3006 - Prepare shopfittings and surfaces and apply liquid finishes.

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to:

- CPC31912 Certificate III in Joinery.
- CPC32211 Certificate III in Joinery (Stairs).

Qualification Description

This qualification provides a trade outcome in joinery covering work for residential and commercial applications.

Occupational titles may include

- Joiner
- Stair builder.

State and territory jurisdictions may have different licensing, legislative, regulatory or certification requirements. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

This qualification is suitable for an Australian apprenticeship pathway.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 29 units of competency
 - 18 core units
 - 11 elective units
- a minimum of five units must be selected from Group A
- the remaining units can be selected from any group or any current training package or accredited course, as long as they contribute to a valid, industry-supported vocational outcome and maintain the AQF level of this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements.

Core Units

CPCCCA2002*	Use carpentry tools and equipment
CPCCCA2011*	Handle carpentry materials
CPCCCA3010*	Install windows and doors
CPCCCM2006	Apply basic levelling procedures
CPCCCM2012*	Work safely at heights
CPCCCM3004	Identify and apply information in construction plans, drawings and specifications
CPCCJN2003*	Package manufactured products for transport
CPCCJN3002*	Use computer-controlled machinery

CPCCJN3004*	Manufacture and assemble joinery components
CPCCJN3100*	Process materials to produce components using static machines
CPCCJS3002*	Manufacture stair components for straight flighted stairs
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCOM3001	Perform construction calculations to determine carpentry material requirements
MSFFM3011	Measure and draw site layout for manufactured furniture products

Group A - Specialist Electives

CPCCCA3012*	Frame and fit wet area fixtures
CPCCCA3016*	Construct, assemble and install timber external stairs
CPCCCA3024*	Install lining, panelling and moulding
CPCCJN3003*	Manufacture components for doors, windows and frames
CPCCJS3003*	Assemble and install stairs
CPCCJS3004*	Manufacture and install continuous handrailing and special stair components
CPCCJS3005*	Manufacture stair components for curved and geometric stairs
CPCCJS3006*	Construct, assemble and install composite external stairs
CPCCJS3011*	Design and set out stairs

Group B - General Electives

CPCCCA3001*	Carry out general demolition of minor building structures
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CPCCCA3003*	Install flooring systems
CPCCCA3004*	Construct and erect wall frames
CPCCCA3006*	Erect roof trusses
CPCCCA3011*	Refurbish timber sashes to window frames
CPCCCA3014*	Construct and install bulkheads
CPCCCA3026*	Assemble partitions
CPCCCM3005	Calculate costs of construction work
CPCCJN2001*	Assemble components
CPCCJN3005*	Cut and install glass
CPCCPD3021*	Prepare existing coated surface for painting
CPCCSH2003*	Apply and install sealant and sealant devices
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
CPCSHP3001	Fabricate shopfitting components using CNC machines
CPCSHP3005	Apply and trim decorative additions to shopfittings and components
CPCSHP3006	Prepare shopfittings and surfaces and apply liquid finishes
CPCWHS3001	Identify construction work hazards and select risk control strategies
MSFFM3009	Produce manual and computer-aided production drawings
MSFFM3020	Fabricate synthetic solid surface products

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC31920	CPC31912 Certificate	Supersedes and is equivalent to	E

Certificate III in Joinery	III in Joinery	CPC31912 Certificate III in Joinery. Updated to meet the Standards for Training Packages 2012.	
CPC31920 Certificate III in Joinery	CPC32211 Certificate III in Joinery (Stairs)	Supersedes and is equivalent to CPC32211 Certificate III in Joinery (Stairs). Updated to meet the Standards for Training Packages 2012.	E

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC32320 Certificate III in Stonemasonry

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

Removal of prerequisite asterisks from units:

- CPCCOM1012 Work effectively and sustainably in the construction industry
- CPCCOM1013 Plan and organise work
- CPCCOM1014 Conduct workplace communication.

Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor changes to Core unit list for clarity. Correction to Release 1 version history.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC32313 Certificate III in Stonemasonry (Monumental/Installation). Updated qualification to meet Standards for Training Packages.

Qualification Description

This qualification is designed to meet the needs of stonemasons working with sandstone, limestone, marble and other types of stone and stone products to produce stone monuments, buildings (heritage and new) and building components, such as walls, floors, arches, chimneys, stairs, windows, decorative mouldings, fireplaces and benchtops.

Occupational titles may include:

- Architectural stonemason
- Monumental stonemason
- Heritage stonemason
- Finisher
- Bench-top mason
- Stonemason.

This qualification is suitable for an Australian Apprenticeship pathway.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

This qualification has core and elective units of competency that cover the skills and knowledge of four specialist groups and general electives:

- Group A - Architectural heritage, conservation and restoration stonemasonry
- Group B - New and contemporary works (building stonemasonry)
- Group C - Monumental stonemasonry
- Group D - Bench-tops

To achieve this qualification, competency must be demonstrated in:

- 30 units of competency:
 - 21 core units
 - 9 electives

The electives are to be chosen as follows:

- all 8 units within Group A - Heritage, conservation and restoration stonemasonry
or
- all 7 units within Group B - New and contemporary works (building stonemasonry)
or
- all 5 units within Group C - Monumental stonemasonry
or
- all 4 units within Group D - Bench-tops
- the remaining units can be selected from any elective group or the general electives as long as the units have not previously been selected
- up to two elective units can be selected from any Training Package or accredited course, as long as they contribute to a valid, industry-supported vocational outcome and support the AQF level of this qualification.

Prerequisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCCA3002*	Carry out setting out
CPCCCM2006	Apply basic levelling procedures
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM2012*	Work safely at heights
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCST2003*	Finish stone
CPCCST2004*	Lay stone
CPCCST2006*	Identify and use stone products
CPCCST2007*	Use stonemasonry tools, plant and equipment
CPCCST3001*	Dress and mould stone
CPCCST3002*	Shape solid stone
CPCCST3003*	Split stone manually
CPCCST3004*	Dress stone manually
CPCCST3006*	Machine stone
CPCCST3010*	Set out and cut letters in stone
CPCCST3022*	Carry out profile work
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

Elective units

Group A - Architectural heritage, conservation and restoration stonemasonry

CPCCBL3016*	Construct battered masonry walls and piers
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CPCCBBL3017*	Carry out tuck pointing and repointing to masonry
CPCCST3017*	Construct stone arches
CPCCST3019*	Lay stonemasonry stairs
CPCCST3021*	Restore stone work
CPCCST3023	Apply drawing principles to stonemasonry
CPCCST3024*	Apply conservation principles and practices to heritage stonework
CPCCST3025*	Carry out basic stonemasonry demolition

Group B - Architectural new and contemporary works

CPCCBBL3016*	Construct battered masonry walls and piers
CPCCPA3001*	Prepare subgrade, base and bedding course for segmental paving
CPCCST3012*	Build stone veneer walls
CPCCST3016*	Build solid stonemasonry walls
CPCCST3017*	Construct stone arches
CPCCST3019*	Lay stonemasonry stairs
CPCCST3020*	Produce reconstituted stone

Group C - Monumental

CPCCCM2002*	Carry out hand excavation
CPCCST3011*	Plan monument construction
CPCCST3013*	Carry out cemetery monument fixing
CPCCST3015*	Apply gilding to stone
CPCCST3018*	Inlay lead to stone

Group D Bench-Tops

CPCCCM2005*	Use construction tools and equipment
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CPCCJN2001*	Assemble components
CPCCJN2003*	Package manufactured products for transport
CPCCST3009*	Use computer-controlled static machinery to produce stone components

General Elective Units

BSBESB301	Investigate business opportunities
BSBESB407	Manage finances for new business ventures
CPCCCO2013*	Carry out concreting to simple forms
CPCCPA3002*	Lay segmental paving
CPCCPA3003*	Cut segmental paving
CPCCSC2002*	Erect and dismantle basic scaffolding
CPCCST2001*	Prepare for stonemasonry construction process
CPCCST2005*	Carry out load slinging of off-site materials
CPCCST3007*	Turn stone
CPCCST3009*	Use computer-controlled static machinery to produce stone components
CPCCST3014*	Set and anchor stone facades
CPCCST3016*	Build solid stonemasonry walls
CPCCST4001	Prepare to undertake the heritage restoration process
CPCCST4002	Undertake the heritage restoration process
CPCCST4003	Undertake preparations for refractory works
CPCCST4004	Initiate the heritage works process
CPCCST4005	Prepare drawings for heritage works
CPCCST4006	Prepare report for heritage restoration work
CPCCST4007	Construct a fire brick wall and arch using refractory materials

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/ NE
CPC32320 Certificate III in Stonemasonry	CPC32313 Certificate III in Stonemasonry (Monumental/ Installation)	Supersedes and is equivalent to CPC32313 Certificate III in Stonemasonry (Monumental/Installation). Updated qualification to meet Standards for Training Packages.	E

Links

An Implementation Guide to this Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC32420 Certificate III in Plumbing

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Addition of CPCPCM2052 Weld mild steel using oxy-acetylene equipment and CPCPCM2055 Work safely on roofs to unit grid.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Addition of CPCPRF2024 Fabricate roof coverings for curved structures to Group D Elective units.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is not equivalent to CPC32413 Certificate III in Plumbing.
Updated to meet the Standards for Training Packages 2012.

Qualification Description

This is a trade qualification for plumbers in residential, industrial and commercial workplaces who are responsible for assembling, installing and maintaining water services, sanitary plumbing and sanitary drainage, gas, roofing and mechanical services in both existing and new constructions.

Occupational titles could include:

- Plumber
- Plumber and drainer
- Plumber and gasfitter
- Gasfitter
- Roof plumber
- Mechanical services plumber.

The plumbing industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or closely simulated workplace environment and this qualification requires all units of competency to be delivered and assessed in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required before entering a construction work site. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

This is a licenced occupation. State and territory jurisdictions may have different licensing, legislative, regulatory or certification requirements. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

This qualification is suitable for an Australian Apprenticeship pathway.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded this qualification, competency in one of the four occupational options must be achieved.

OPTION 1: General Plumbing

For the award of the CPC32420 Certificate III in Plumbing (General Plumber) a minimum of 58 units are to be completed as follows:

- 43 core units
- 15 elective units

Electives are to be selected as followed:

- 8 units from Group A and
- 4 units from Group B and
- 3 units from Group C

An additional 4 elective units may be selected from any other group or from any relevant nationally endorsed Training Package or accredited course. The units must contribute to the vocational outcomes of the qualification.

OPTION 2: General Plumbing – Roofing

For the award of the CPC32420 Certificate III in Plumbing (General Plumber and Roofing) a minimum of 62 units are to be completed as follows:

- 43 core units
- 19 elective units.

Electives are to be selected as followed:

- 8 units from Group A and
- 4 units from Group B and
- 3 units from Group C and
- 4 units from Group D

An additional 4 elective units may be selected from any other group or from any relevant nationally endorsed Training Package or accredited course. The units must contribute to the vocational outcomes of the qualification.

OPTION 3: General Plumber – Mechanical

For the award of the CPC32420 Certificate III in Plumbing (General Plumber and Mechanical) a minimum of 73 units are to be completed as follows:

- 43 core units
- 30 electives

Electives are to be selected as followed:

- 8 units from Group A and
- 4 units from Group B and
- 3 units from Group C and
- 7 units from Group E and
- 8 units from Group F

An additional 4 elective units may be selected from any other group or from any relevant nationally endorsed Training Package or accredited course. The units must contribute to the vocational outcomes of the qualification.

OPTION 4: General Plumbing – Roofing and Mechanical

For the award of the CPC32420 Certificate III in Plumbing (General Plumber Roofing and Mechanical) a minimum of 77 units are to be completed as follows:

- 43 core units
- 34 electives

Electives are to be selected as followed:

- 8 units from Group A and
- 4 units from Group B and
- 3 units from Group C and
- 4 units from Group D and
- 7 units from Group E and
- 8 units from Group F

An additional 4 elective units may be selected from any other group or from any relevant nationally endorsed Training Package or accredited course. The units must contribute to the vocational outcomes of the qualification.

An asterisk (*) against a unit code below indicates that the unit has a prerequisite. Please check the unit for information on this. All prerequisites are packaged in the qualification.

Core Units

CPCCCM2012*	Work safely at heights
CPCPCM2039	Carry out interactive workplace communication
CPCPCM2040*	Read plans, calculate quantities and mark out materials
CPCPCM2041	Work effectively in the plumbing services sector

CPCPCM2043	Carry out WHS requirements
CPCPCM2045*	Handle and store plumbing materials
CPCPCM2046*	Use plumbing hand and power tools
CPCPCM2047*	Carry out levelling
CPCPCM2048*	Cut and join sheet metal
CPCPCM2054*	Carry out simple concreting and rendering
CPCPCM2055*	Work safely on roofs
CPCPCM3021*	Flash penetrations through roofs and walls
CPCPCM3022*	Weld polymer pipes using fusion method
CPCPCM3023*	Fabricate and install non-ferrous pressure piping
CPCPCM3024*	Prepare simple drawings
CPCPCM3025*	Install trench support
CPCPDR2021*	Locate and clear blockages
CPCPDR2025*	Install stormwater and sub-soil drainage systems and drain work site
CPCPDR2026*	Install prefabricated inspection openings and inspection chambers
CPCPDR3021*	Plan layout and install below ground sanitary drainage systems
CPCPDR3023*	Install on-site domestic wastewater treatment plants and disposal systems
CPCPFS3031*	Fabricate and install fire hydrant and hose reel systems
CPCPGS3048*	Install gas pressure control equipment
CPCPGS3049*	Install gas appliance flues
CPCPGS3051*	Purge consumer piping
CPCPGS3053*	Disconnect and reconnect Type A gas appliances
CPCPGS3054*	Calculate and install natural ventilation for Type A gas appliances
CPCPGS3056*	Size and install consumer gas piping systems
CPCPGS3059*	Install LPG storage of aggregate storage capacity up to 500 litres
CPCPGS3061*	Install and commission Type A gas appliances

CPCPSN3011*	Plan the layout of a residential sanitary plumbing system and fabricate and install sanitary stacks
CPCPSN3022*	Install discharge pipes
CPCPWT3020*	Connect and install storage tanks to a domestic water supply
CPCPWT3021*	Set out and install water services
CPCPWT3022*	Install and commission water heating systems and adjust controls and devices
CPCPWT3025*	Install water pumpsets
CPCPWT3026*	Install and fit off sanitary fixtures, water services and adjust water service controls
CPCPWT3027*	Install backflow prevention devices
CPCPRF2023*	Collect and store roof water
CPCPRF3022*	Fabricate and install roof drainage systems
CPCPRF3023*	Fabricate and install external flashings
CPCPRF3024*	Install roof components
HLTAID011	Provide first aid

Electives Units

Group A

CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCPCM2049*	Cut mild steel using oxy-LPG-acetylene equipment
CPCPCM2052*	Weld mild steel using oxy-acetylene equipment
CPCPFS3037*	Install residential life safety sprinkler systems
CPCPFS3038*	Test and maintain fire hydrant and hose reel installations
CPCPIG2021*	Design domestic urban irrigation systems
CPCPIG3021*	Set out, install and commission irrigation systems
CPCPIG3022*	Install and commission domestic irrigation pumps

CPCPWT3024*	Install and maintain domestic water treatment equipment
CPCPWT3028*	Install property service
CPCPWT3029*	Install water pipe systems
CPCPWT3030*	Install home fire sprinkler systems
MEM11011*	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006*	Organise and communicate information
MEM05049*	Perform routine gas tungsten arc welding
MEM05050*	Perform routine gas metal arc welding
RIIWHS202E	Enter and work in confined spaces

Group B

CPCPCM2053*	Weld using metal arc welding equipment
CPCPGS3046*	Install LPG systems in caravans, mobile homes and mobile workplaces
CPCPGS3052*	Maintain Type A gas appliances
CPCPGS3055*	Install gas sub-meters
CPCPGS3060*	Install LPG storage of aggregate storage capacity exceeding 500 litres and less than 8 kl
CPCPGS3047*	Install LPG systems in marine craft

Group C

CPCPDR3025*	Plan layout and install vacuum drainage systems
CPCPSN3025*	Install pre-treatment facilities
CPCPSN3026*	Install sewerage pumpsets
RIIWHS202E	Enter and work in confined spaces
RIICTT306E	Install cure in-place linings for existing pipeline systems

Group D

CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCPRF2022*	Select and install roof sheeting and wall cladding
CPCPRF2024*	Fabricate roof coverings for curved structures
CPCPRF3021*	Receive roofing materials
CPCPRF3025*	Install roof coverings to curved roof structures
CPCPRF3026*	Install roof sheets, wall cladding and complex flashings
CPCPRF3027*	Select and install a heritage roof system

Group E

CPCPMS2021*	Assemble mechanical services components
CPCPMS3031*	Fabricate and install steel pressure piping
CPCPMS3032*	Select and fit insulation and sheathing
CPCPMS3035*	Install and test ducting systems
CPCPMS3036*	Install air handling units
CPCPMS3038*	Install air conditioning control equipment
CPCPMS3039*	Maintain mechanical services equipment

Group F

CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCCCWC2001*	Complete penetrations and flashings
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry

CPCPCM2053*	Weld using metal arc welding equipment
CPCPMS3033*	Install small bore heating systems
CPCPMS3034*	Install and test medical gas pipeline systems
CPCPMS3037*	Install and commission a single head split system air conditioning
CPCPMS3040*	Install and maintain evaporative air-cooling systems
CPCPMS3041*	Install domestic solid fuel burning appliances
UEECD0007*	Apply work health and safety regulations, codes and practices in the workplace
UEERA0049*	Install and start up single head split air conditioning and water heating heat pump systems
UEERA0059*	Prepare and connect refrigerant tubing and fittings
UEERA0064*	Recover, pressure test, evacuate, charge and leak test refrigerants - split systems

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC32420 Certificate III in Plumbing.	CPC32413 Certificate III in Plumbing.	Supersedes and is not equivalent to CPC32413 Certificate III in Plumbing. Updated to meet the Standards for Training Packages 2012.	NE

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC32620 Certificate III in Roof Plumbing

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.
Included CPCCCM2008 Erect and dismantle restricted height scaffolding and CPCCCM2012 Work safely at heights in metadata unit grid.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Addition of CPCPRF2024 Fabricate roof coverings for curved structures to Elective units.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPC32612 Certificate III in Roof Plumbing.
Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification reflects the role of a person installing, maintaining and repairing flashings, metal roof and wall claddings and rainwater products such as gutters and downpipes, and other accessories on residential, industrial and commercial buildings.

Occupational titles could include:

- Roof plumber

This qualification includes units of competency common to other qualifications in the plumbing industry as well as roof plumbing specialist units of competency and can provide a pathway to further learning and work in the plumbing industry.

The plumbing industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or closely simulated workplace environment and this qualification requires all units of competency to be delivered and assessed in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required before entering a construction work site. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

This is a licenced occupation. Licensing, legislative, regulatory and certification requirements may vary between states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded this qualification, competency must be achieved in:

- 23 units of competency:
 - 20 core units
 - 3 elective units.

The elective units must ensure the integrity of the AQF alignment and contribute to a valid, industry-supported vocational outcome and are to be chosen as follows:

- 2 elective units must be chosen from units listed below
- Up to 1 elective unit may be selected from any other group or from any relevant nationally endorsed Training Package or accredited course.

An asterisk (*) against a unit code below indicates that the unit has a prerequisite. Please check the unit for information on this. All prerequisites are packaged in the qualification.

Core Units

CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM2012*	Work safely at heights
CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
CPCPCM2040*	Read plans, calculate quantities and mark out materials
CPCPCM2041	Work effectively in the plumbing services sector
CPCPCM2043	Carry out WHS requirements
CPCPCM2047*	Carry out levelling
CPCPCM2048*	Cut and join sheet metal
CPCPCM2055*	Work safely on roofs
CPCPCM3021*	Flash penetrations through roofs and walls
CPCPCM3024*	Prepare simple drawings

CPCPRF2022*	Select and install roof sheeting and wall cladding
CPCPRF2023*	Collect and store roof water
CPCPRF3022*	Fabricate and install roof drainage systems
CPCPRF3023*	Fabricate and install external flashings
CPCPRF3024*	Install roof components
CPCPRF3025*	Install roof coverings to curved roof structures
CPCPRF3026*	Install roof sheets, wall cladding and complex flashings
HLTAID011	Provide first aid

Elective Units

CPCCPB3015*	Install acoustic and thermal environmental protection systems
CPCCRI3001	Operate personnel and materials hoists
CPC CST2005*	Carry out load slinging of off-site materials
CPCPCM2049*	Cut mild steel using oxy-acetylene equipment
CPCPCM3022*	Weld polymer pipes using fusion method
CPCPCM4013	Produce 2-D architectural drawings using design software
CPCPRF2024*	Fabricate roof coverings for curved structures
CPCPRF3027*	Select and install a heritage roof system
CPCPRF4011*	Design and size roof drainage systems
MEM05049*	Perform routine gas tungsten arc welding
MEM05050 *	Perform routine gas metal arc welding
MEM11011*	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006*	Organise and communicate information

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC32620 Certificate III in Roof Plumbing	CPC32612 Certificate III in Roof Plumbing	Supersedes and is equivalent to CPC32612 Certificate III in Roof Plumbing. Updated to meet the Standards for Training Packages 2012.	E

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC32720 Certificate III in Gas Fitting

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Title changed for CPCPCM3022 and an asterisk added to MEM11011 and MEM16006 for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC32713 Certificate III in Gas Fitting. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification reflects role of a person installing, testing, maintaining and repairing gas lines, meters, regulators and piping systems downstream of the billing meter, and appliances and ancillary equipment such as hot water systems, gas heaters and heat pumps associated with the use of fuel gases, including liquefied petroleum gas (LPG) systems.

Occupational titles could include:

- Gas fitter.

This qualification includes units of competency common to other qualifications in the plumbing industry as well as gas fitting specialist units of competency and can provide a pathway to further learning and work in the plumbing industry.

The plumbing industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or closely simulated workplace environment and this qualification requires all units of competency to be delivered and assessed in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required before entering a construction work site. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

This is a licenced occupation. Licensing, legislative, regulatory and certification requirements may vary between states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded this qualification, competency must be achieved in:

- 31 units of competency:
 - 26 core units
 - 5 elective units.

The elective units must ensure the integrity of the AQF alignment and contribute to a valid, industry-supported vocational outcome and are to be chosen as follows:

- 3 elective units must be chosen from listed below,
- 2 elective units can be selected from the list below or may be replaced by units from any relevant nationally endorsed Training Package or accredited course.

An asterisk (*) against a unit code below indicates that the unit has a prerequisite. Please check the unit for information on this. All prerequisites are packaged in the qualification.

Core Units

CPCCCM2012*	Work safely at heights
CPCCWHS2001	Apply WHS requirement, policies and procedures in the construction industry
CPCPCM2039	Carry out interactive workplace communication
CPCPCM2040*	Read plans, calculate quantities and mark out materials
CPCPCM2041	Work effectively in the plumbing services sectors
CPCPCM2043	Carry out WHS requirements
CPCPCM2045*	Handle and store plumbing materials
CPCPCM2046*	Use plumbing hand and power tools
CPCPCM2047*	Carry out levelling
CPCPCM2048*	Cut and join sheet metal
CPCPCM2055*	Work safely on roofs
CPCPCM3021*	Flash penetrations through roofs and walls
CPCPCM3022*	Weld polymer pipes using fusion method
CPCPCM3023*	Fabricate and install non-ferrous pressure piping
CPCPGS3046*	Install LPG systems in caravans, mobile homes and mobile

workplaces

CPCPGS3047*	Install LPG systems in marine craft
CPCPGS3048*	Install gas pressure control equipment
CPCPGS3051*	Purge consumer piping
CPCPGS3052*	Maintain Type A gas appliances
CPCPGS3053*	Disconnect and reconnect Type A gas appliances
CPCPGS3054*	Calculate and install natural ventilation for Type A gas appliances
CPCPGS3056*	Size and install consumer gas piping systems
CPCPGS3059*	Install LPG storage of aggregate storage capacity up to 500 litres
CPCPGS3061*	Install and commission Type A gas appliances
CPCPGS3049*	Install gas appliance flues
HLTAID011	Provide first aid

Elective units

CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM3001	Operate elevated work platforms
CPCCRI3001*	Operate personnel and materials hoists
CPC CST2005*	Carry out load slinging of off-site materials
CPCPCM2049*	Cut mild steel using oxy-LPG-acetylene equipment
CPCPCM2053*	Weld using manual metal arc welding equipment
CPCPCM2054*	Carry out simple concreting and rendering
CPCPCM3024*	Prepare simple drawings
CPCPCM3025	Install trench support
CPCPCM4013	Produce 2-D architectural drawings using design software
CPCPGS3055*	Install gas sub-meters
CPCPGS3060*	Install LPG storage of aggregate storage capacity exceeding 500 litres

	and less than 8 kl
CPCPGS4011*	Design and size consumer gas installations
CPCPMS3031*	Fabricate and install steel pressure piping
CPCPMS3033 *	Install small bore heating systems
MEM05049*	Perform routine gas tungsten arc welding
MEM05050 *	Perform routine gas metal arc welding
MEM11011*	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006*	Organise and communicate information
UEERL0004	Disconnect-reconnect electrical equipment connected to low voltage (LV) installation wiring

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC32720 Certificate III in Gas Fitting	CPC32713 Certificate III in Gas Fitting	Supersedes and is equivalent to CPC32713 Certificate III in Gas Fitting. Updated to meet the Standards for Training Packages 2012.	E

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC32820 Certificate III in Fire Protection

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.
- Unit code corrected in core unit list: CPCPCM2019 Carry out interactive workplace communication to CPCPCM2039 Carry out interactive workplace communication.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Correction to unit title CPCPCM3022 in Elective units.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPC32813 Certificate III in Fire Protection. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification reflects the trade qualified role of a person installing, testing, maintaining, routine service and repairing a range of fire protection systems.

Occupational titles could include:

- Fire sprinkler fitter tradesperson
- Fire sprinkler fitter.

This qualification includes units of competency common to other qualifications in the plumbing industry as well as specialist fire protection units and can provide a pathway to further learning and work in the fire protection industry.

The plumbing industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or closely simulated workplace environment and this qualification requires all units of competency to be delivered and assessed in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required before entering a construction work site. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

This is a licenced occupation. Licensing, legislative, regulatory and certification requirements may vary between states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 37 units of competency:
 - 32 core units
 - 5 elective units.

The elective units must ensure the integrity of the AQF alignment and contribute to a valid, industry-supported vocational outcome and are to be chosen as follows:

- a minimum of 3 elective units must be chosen from those listed below,
- up to 2 units may be chosen from the elective units listed below or from any Training Package or accredited course.

An asterisk (*) against a unit code below indicates that the unit has a prerequisite. Please check the unit for information on this. All prerequisites are packaged in the qualification.

Core Units

CPCPCM2045*	Handle and store plumbing materials
CPCPCM2046*	Use plumbing hand and power tools
CPCPCM2039	Carry out interactive workplace communication
CPCPCM2041	Work effectively in the plumbing and services sector
CPCPCM2040*	Read plans, calculate quantities and mark out materials
CPCPCM2043	Carry out WHS requirements
CPCPCM2047*	Carry out levelling
CPCPCM2049*	Cut using oxy-LPG-acetylene equipment
CPCPCM2052*	Weld using oxy-acetylene equipment
CPCPCM2053*	Weld using metal arc welding equipment
CPCPCM3023*	Fabricate and install non-ferrous pressure piping
CPCPFS2021*	Connect static storage tanks for fixed fire protection systems
CPCPFS3030	Design fire sprinkler systems using pre-calculated charts and tables

CPCPFS3031*	Fabricate and install fire hydrant and hose reel systems
CPCPFS3034*	Install control valve assemblies, actuating devices and local alarms
CPCPFS3036*	Install special hazard systems
CPCPFS3037*	Install residential life safety sprinkler systems
CPCPFS3038*	Test and maintain fire hydrant and hose reel installations
CPCPFS3040	Conduct basic functional testing of water-based fire-suppression systems
CPCPFS3041	Inspect and test fire pumpsets
CPCPFS3042*	Conduct annual routine service of complex water-based fire-suppression systems
CPCPFS3043*	Conduct functional water flow testing
CPCPFS3044*	Install distribution and range pipes
CPCPFS3045*	Fit off sprinkler heads, controls and ancillary equipment
CPCPFS3046*	Test the integrity of water-based fire protection systems using pressure
CPCPFS3047*	Test and maintain automatic fire sprinklers
CPCPFS3048*	Install fixed fire pumpsets
CPCPMS3031*	Fabricate and install steel pressure piping
CPCPWT3028*	Install property service
CPPFES2025A	Inspect, test and maintain gaseous fire-suppression systems
CPPFES2043A	Prevent ozone depleting substance and synthetic greenhouse gas emissions
CPPFES2047A	Inspect and test control and indicating equipment

General Electives

CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM2012*	Work safely at heights
CPCCCM3001	Operate elevated work platforms

CPCCPB3015*	Install acoustic and thermal environmental protection systems
CPCCRI3001	Operate personnel and materials hoists
CPC CST2005*	Carry out load slinging of off-site materials
CPC CWHS2001	Apply WHS requirements, policies and procedures in the construction industry
CPCPCM2054*	Carry out simple concreting and rendering
CPCPCM3021*	Flash penetrations through roofs and walls
CPCPCM3022*	Weld polymer pipes using fusion method
CPCPCM2048*	Cut and join sheet metal
CPCPFS2022*	Install portable fire equipment
CPCPFS3049*	Conduct preventive maintenance on fixed fire pumpsets
CPCPWT3025*	Install water pumpsets
CPCPWT3029*	Install water pipe systems
CPPCMN2002	Participate in workplace safety arrangements
HLTAID011	Provide first aid

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC32820 Certificate III in Fire Protection	CPC32813 Certificate III in Fire Protection	Supersedes and is equivalent to CPC32813 Certificate III in Fire Protection. Updated to meet the Standards for Training Packages 2012.	E

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC32920 Certificate III in Construction Crane Operations

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in unit code corrected for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC32912 Certificate III in Construction Crane Operations. Updated to meet the Standards for Training Packages.

Qualification Description

This qualification provides reflects the role of individuals working in the area of crane operations in the construction industry.

Occupational titles include licensed crane operator.

The qualification has core units of competency that cover common skills and knowledge for the building and construction industry, a choice of units for specific crane licences, and elective units that include additional licensing options. Due to the high-risk nature of the job role, the qualification provides a strong focus on safety.

This is a licensed occupation. Users should check requirements with their relevant licensing authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 23 units of competency:
 - 16 core units
 - 7 elective units.

Elective units must be selected as follows:

- 1 unit must be selected from the Group A list of elective units below
- at least 4 units must be selected from the remaining Group A list of elective units or Group B list of elective units
- up to 2 units can be selected from the list of elective units below or from any current training package or accredited course where the unit contributes to a valid, industry-supported vocational outcome, maintains the integrity of the Australian Qualifications Framework (AQF) level of this qualification, and does not duplicate the outcomes of another unit used to achieve this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit/s must be assessed before assessment of any unit of competency with an asterisk. All prerequisite requirements are packaged in the qualification.

Core units

BSBOPS304	Deliver and monitor a service to customers
CPCCCM2004*	Handle construction materials
CPCCCM2012*	Work safely at heights
CPCCCM3001	Operate elevated work platforms up to 11 metres
CPCCCM3003	Work safely around electrical sources, services and assets
CPCCLDG3001	Licence to perform dogging
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
TLIB3015	Undertake site inspection
TLIF2006	Apply accident-emergency procedures
TLIF2010	Apply fatigue management strategies

TLILIC0008 Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)

Elective units

Group A

TLILIC0010 Licence to operate a slewing mobile crane (up to 20 tonnes)

TLILIC0013 Licence to operate a slewing mobile crane (up to 60 tonnes)

Group B

CPCEDO3012* Perform crane scheduling

CPCCLHS3001 Licence to operate a personnel and materials hoist

CPCCLRG3001* Licence to perform rigging basic level

CPCCLRG3002* Licence to perform rigging intermediate level

CPCCLTC4001 Licence to operate a tower crane

CPCCLTC4002 Licence to operate a self-erecting tower crane have been added to elective Group B

HLTAID011 Provide first aid

TLIB3011 Set up and rig crane for lift

TLIB3013 Maintain mobile cranes

TLIF3084 Follow mobile crane safety procedures

TLILIC0003 Licence to operate a forklift truck

TLILIC0005 Licence to operate a boom-type elevated work platform (boom length 11 metres or more)

TLILIC2016 Licence to drive a heavy rigid vehicle

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Packages Release 5.0	CPC Construction, Plumbing and Services Training Packages Release 4.0	Comments	E/NE
CPC32920 Certificate III in Construction Crane Operations.	CPC32912 Certificate III in Construction Crane Operations.	Supersedes and is equivalent to CPC32912 Certificate III in Construction Crane Operations. Updated to meet the Standards for Training Packages.	E

Links

The Companion Volume Implementation Guide for the CPC Construction, Plumbing and Services Training Package is available at -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC33020 Certificate III in Bricklaying and Blocklaying

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

Removal of prerequisite asterisks from units:

- CPCCOM1012 Work effectively and sustainably in the construction industry
- CPCCOM1013 Plan and organise work
- CPCCOM1014 Conduct workplace communication.

Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Title change in unit list for CPCCB3017 Carry out tuck pointing brickwork.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC30111 Certificate III in Bricklaying/Blocklaying.

Qualification Description

This qualification reflects the trade qualified role of a bricklayer, blocklayer or paver who may have responsibility for undertaking heritage bricklaying, refractory bricklaying, bricklaying, blocklaying and paving work in residential, industrial and commercial contexts, in both existing and new constructions.

Occupational titles could include:

- Bricklayer
- Blocklayer
- Paver.

The bricklaying, blocklaying and paving industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or closely simulated workplace environment and this qualification requires all units of competency to be delivered and assessed in this context.

Licensing, legislative, regulatory and certification requirements vary between states. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

This qualification has core units and elective units of competency that cover the skills and knowledge of three specialist groups, and general electives:

- Group A - Traditional and heritage bricklaying
- Group B - Refractory Bricklaying
- Group C - Paving

To achieve this qualification, competency must be demonstrated in:

- 28 units of competency:
 - 20 core units
 - 8 elective units.
- the elective units can be selected, once only, from any of the groups listed below.
- up to two elective units can be selected from any Training Package and or accredited course, as long as they contribute to a valid, industry-supported vocational outcome and support the AQF level of this qualification.

Prerequisite units

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCB2001*	Handle and prepare bricklaying and blocklaying materials
CPCCB2002*	Use bricklaying and blocklaying tools and equipment
CPCCB3002*	Carry out masonry veneer construction
CPCCB3003*	Carry out cavity brick construction
CPCCB3005*	Lay masonry walls and corners
CPCCB3006*	Lay multi-thickness walls and piers

CPCCBL3009*	Install flashings and damp proof course
CPCCBL3010*	Construct masonry arches
CPCCBL3011*	Construct curved walls
CPCCBL3013*	Construct masonry structural systems
CPCCCA3002*	Carry out setting out
CPCCCM2006	Apply basic levelling procedures
CPCCCM2008*	Erect and dismantle restricted height scaffolding
CPCCCM2012*	Work safely at heights
CPCCOM1012	Work effectively and sustainably in the construction industry
CPCCOM1013	Plan and organise work
CPCCOM1014	Conduct workplace communication
CPCCOM1015	Carry out measurements and calculations
CPCCOM2001*	Read and interpret plans and specifications
CPCCWHS2001	Apply WHS requirements, policies, and procedures in the construction industry

Elective units

Group A - Traditional and heritage bricklaying

CPCCST4001	Prepare to undertake the heritage restoration process
CPCCST4002	Undertake the heritage restoration process
CPCCBL3004*	Construct masonry steps and stairs
CPCCBL3012*	Construct fireplaces and chimneys
CPCCBL3015*	Construct decorative brickwork
CPCCBL3016*	Construct battered masonry walls and piers
CPCCBL3017*	Carry out tuck pointing and repointing to masonry
CPCCCO2013*	Carry out concreting to simple forms

CPCCSF2004* Place and fix reinforcement materials

Group B – Refractory Bricklaying

CPCCCST4003 Undertake preparations for refractory work

CPCCCST4007 Construct a fire brick wall and arch using refractory materials

CPCCCBL3004* Construct masonry steps and stairs

CPCCCBL3012* Construct fireplaces and chimneys

CPCCCBL3016* Construct battered masonry walls and piers

CPCCCCM2009* Carry out basic demolition

CPCCCCO2013* Carry out concreting to simple forms

CPCCSF2004* Place and fix reinforcement materials

Group C - Paving

CPCCCCO2013* Carry out concreting to simple forms

CPCCCPA3001* Prepare subgrade, base and bedding course for segmental paving

CPCCCPA3002* Lay segmental paving

CPCCCPA3003* Cut segmental paving

CPCCCPA3004* Finish segmental paving

CPCCCPA3005* Maintain and repair segmental paving

CPCCSF2004* Place and fix reinforcement materials

General Electives

AHCLSC307 Implement a retaining wall project

CPCCCBC4003 Select, prepare and administer a construction contract

CPCCCST4003 Undertake preparations for refractory work

CPCCCBL3001* Lay paving

CPCCBBL3004*	Construct masonry steps and stairs
CPCCBBL3007*	Install glass blockwork
CPCCBBL3012*	Construct fireplaces and chimneys
CPCCBBL3014*	Install fire-rated masonry construction
CPCCBBL3015*	Construct decorative brickwork
CPCCBBL3016*	Construct battered masonry walls and piers
CPCCBBL3017*	Carry out tuck pointing and repointing to masonry
CPCCBBL3018*	Install aerated autoclaved concrete products
CPCCCM2009*	Carry out basic demolition
CPCCCO2013*	Carry out concreting to simple forms
CPCCPA3001*	Prepare subgrade, base and bedding course for segmental paving
CPCCPA3002*	Lay segmental paving
CPCCPA3003*	Cut segmental paving
CPCCPA3004*	Finish segmental paving
CPCCPA3005*	Maintain and repair segmental paving
CPCCSF2004*	Place and fix reinforcement materials

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC33020 Certificate III in Bricklaying and Blocklaying	CPC30111 Certificate III in Bricklaying/Blocklaying	Supersedes and is equivalent to CPC30111 Certificate III in Bricklaying/Blocklaying.	E

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC40120 Certificate IV in Building and Construction

Modification History

Release 4 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Imported Elective unit BSBWOR501 Manage personal work priorities and professional development updated to BSBPEF501 Manage personal and professional development.

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.

Addition of 3 units of competency to the General Electives:

- CPCBIM4001 Plan to comply with BIM requirements for construction work.
- CPCBIM4002 Use BIM processes to carry out construction work
- CPCBIM4003 Contribute to BIM deliverables for construction work

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Imported unit *BSBPEF501 Manage personal and professional development* replaced by *BSBWOR501 Manage personal work priorities and professional development*. Units listed alphanumerically.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

- Supersedes and is equivalent to CPC40110 Certificate IV in Building and Construction (Building).
- Supersedes and is equivalent to CPC40508 Certificate IV in Building and Construction (Site Management).

Updated imported elective units to current versions.

Qualification Description

This qualification reflects the role of builders, site managers and managers of small to medium-sized building businesses who apply knowledge of structural principles, codes, standards and legal requirements to Class 1 and 10, to a maximum of two storeys and Class 2 to 9 Type C constructions, and who plan and supervise safe building and construction work, prepare and administer contracts, and who apply quality principles to building and construction projects.

Building relates to construction and Site Management is about managing the factors around construction, such as the deployment of crews with specialised skills (including builders), product compliance, deployment of contract specialised skills, weather and site location.

Occupational titles depending on packaging options selected may include:

- Builder
- Construction Supervisor
- Site Manager
- Site Supervisor
- Leading Hand

The qualification is designed to enable two specialised occupational outcome pathways depending on elective options which will be reflected as:

- Certificate IV in Building and Construction (Building) or
- Certificate IV in Building and Construction (Site Management)

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit CPCCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

Builder and Site Supervisor licensing varies across States and Territories and requirements additional to the attainment of this qualification may be required.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 19 units of competency:
 - 11 core units
 - 8 elective units.

To achieve the occupational outcome of **Builder** electives must include:

- All Group A elective units
- Up to two elective units from either Group B or general electives.
- One elective unit may be from any training package or accredited course as long as it ensures the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contributes to a valid, industry supported vocational outcome

To achieve the occupation outcome of **Site Manager** electives must include:

- All Group B electives
- Up to four elective units from either Group A or general electives.

- One unit may be from any training package or accredited course as long as it ensures the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contributes to a valid, industry supported vocational outcome

Prerequisite units

An asterisk (*) next to the unit code indicates that there are prerequisite requirements which must be met when packaging the qualification. Please refer to the Prerequisite requirements table for details.

Prerequisite requirements

Unit of competency	Prerequisite requirement
CPCBC4010 Apply structural principles to residential and commercial constructions.	<p>CPCBC4053 Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings.</p> <p>CPCBC4001 Apply building codes and standards to the construction process for Class 1 and 10 buildings.</p>

Core Units

CPCBC4001	Apply building codes and standards to the construction process for Class 1 and 10 Buildings
CPCBC4002	Manage work health and safety in the building and construction workplace
CPCBC4007	Plan building or construction work
CPCBC4008	Supervise site communication and administration processes for building and construction projects
CPCBC4009	Apply legal requirements to building and construction projects
CPCBC4010*	Apply structural principles to residential and commercial constructions
CPCBC4012	Read and interpret plans and specifications
CPCBC4014	Prepare simple building sketches and drawings
CPCBC4018	Apply site surveys and set-out procedures to building and construction projects
CPCBC4021	Minimise waste on the building and construction site

CPCBC4053 Apply building codes and standards to the construction process for Class 2 to 9, Type C Buildings

Elective Units

Group A - Building

BSBPMG422 Apply project quality management techniques

CPCBC4003 Select, prepare and administer a construction contract

CPCBC4004 Identify and produce estimated costs for building and construction projects

CPCBC4005 Produce labour and material schedules for ordering

CPCBC4006 Select, procure and store construction materials for building and construction projects

CPCSUS4002 Use building science principles to construct energy efficient buildings

Elective Units

Group B – Site Manager

CPCBC4013 Prepare and evaluate tender documentation

CPCBC4017 Arrange resources and prepare for the building and construction project

CPCBC4052 Lead and manage teams in the building and construction industry

CPCCO4001 Supervise concreting work

General Electives

BSBESB402 Establish legal and risk management requirements of new business ventures

BSBESB406 Establish operational strategies and procedures for new business ventures

BSBESB407 Manage finances for new business ventures

BSBLDR413 Lead effective workplace relationships

BSBPEF501 Manage personal and professional development

BSBPMG426	Apply project risk management techniques
BSBPMG430	Undertake project work
BSBWRT411	Write complex documents
CPCBIM4001	Plan to comply with BIM requirements for construction work
CPCBIM4002	Use BIM processes to carry out construction work
CPCBIM4003	Contribute to BIM deliverables for construction work
CPCCCBC4015	Prepare specifications for all construction works
CPCCCBC4019	Apply sustainable building design principles to water management systems
CPCCCBC4020	Build thermally efficient and sustainable structures
CPCCCBC4022	Supervise tilt-up work
CPCCCBC4024	Resolve business disputes
CPCCCBC4026	Arrange building applications and approvals
CPCCCBC4028	Prepare design brief for construction works
CPCCCBC5019	Manage building and construction business finances
CPCSUS4001	Implement and monitor environmentally sustainable work practices
CPCSUS4003	Maximise energy efficiency through applied trade skills

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC40120 Certificate IV in Building and Construction	CPC40110 Certificate IV in Building and Construction (Building)	Supersedes and is equivalent to CPC40110 Certificate IV in Building and Construction (Building). Increase in total number of	E

		<p>units for qualification outcome.</p> <p>Changes to core and elective units and packaging rules.</p> <p>Changed terminology of qualification occupational titles and outcome from building to builder.</p> <p>Updated imported elective units to current versions.</p>	
CPC40120 Certificate IV in Building and Construction	CPC40508 Certificate IV in Building and Construction (Site Management)	<p>Supersedes and is equivalent to CPC40508 Certificate IV in Building and Construction (Site Management).</p> <p>Increase in total number of units for qualification outcome.</p> <p>Changes to core and elective units and packaging rules.</p> <p>Changed terminology of qualification occupational titles and outcome from site management to site manager.</p> <p>Updated imported elective units to current versions.</p>	E

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC40320 Certificate IV in Building Project Support

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Imported unit *BSBPMG522 Undertake project work* replaced by *BSBPMG430 Undertake project work*.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

- Supersedes and is equivalent to CPC40308 Certificate IV in Building and Construction (Estimating).
- Supersedes and is equivalent to CPC40208 Certificate IV in Building and Construction (Contract Administration).

Correction to the occupational outcomes titles. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification is designed to meet the needs of estimators and schedulers and or contract administrators in the building and construction field who may have responsibility for the preparation of estimates from predetermined rates, processing of subcontractor claims and preparation of head and subcontracts for building and construction works.

Occupational titles may include:

- Building estimator
- Building scheduler
- Contract administrator

The qualification packaging enables two specialised occupational outcomes depending on elective options which will be reflected as:

- Certificate IV in Building Project Support (Estimator)
- Certificate IV in Building Project Support (Contract Administrator)

The construction industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or very closely simulated workplace environment and this qualification requires all units of competency to be delivered in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 15 units of competency:
 - 2 core units
 - 13 elective units.

To achieve the occupational outcome of Contract Administrator electives must include:

- all Group A elective units
- minimum of three units from Group B elective units
- remaining units from general electives
- a maximum of two units may be from any training package or accredited course as long as they ensure the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contribute to a valid, industry supported vocational outcome

To achieve the occupation outcome of Estimator electives must include:

- all Group B elective units
- minimum of two units from Group A electives
- remaining units from general electives
- a maximum of two units may be from any training package or accredited course as long as they ensure the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contribute to a valid, industry supported vocational outcome

Prerequisite units

An asterisk (*) next to the unit code indicates that there are prerequisite requirements which must be met when packaging the qualification. Please refer to the Prerequisite requirements table for details.

Core Units

CPCCCBC4012 Read and interpret plans and specifications

CPCCCBC4014 Prepare simple building sketches and drawings

Elective Units

Group A - Contract Administration

CPCCCBC4003 Select, prepare and administer a construction contract

- CPCBC4006 Select, procure and store construction materials for building and construction projects
- CPCBC4026 Arrange building applications and approvals
- CPCBC4031 Process client requirements

Group B - Estimating

- BSBPMG426 Apply project risk management techniques
- CPCBC4001 Apply building codes and standards to the construction process for Class 1 and 10 buildings
- CPCBC4004 Identify and produce estimated costs for building and construction projects
- CPCBC4005 Produce labour and material schedules for ordering
- CPCBC4010* Apply structural principles to residential and commercial constructions
- CPCBC4013 Prepare and evaluate tender documentation
- CPCBC4053 Apply building codes and standards to the construction process for Class 2 to 9, Type C buildings

Group C - General Electives

- BSBLDR413 Lead effective workplace relationships
- BSBLDR414 Lead team effectiveness^[SEP]
- BSBPMG422 Apply project quality management techniques
- BSBPMG430 Undertake project work
- BSBWRT411 Write complex documents
- BSBPEF501 Manage personal professional development
- CPCBC4007 Plan building or construction work
- CPCBC4015 Prepare specifications for all construction works
- CPCBC4017 Arrange resources and prepare for the building and construction project

CPCBC4019	Apply sustainable building design principles to water management systems
CPCBC4020	Build thermally efficient and sustainable structures
CPCBC4021	Minimise waste on the building and construction site
CPCBC4024	Resolve business disputes
CPCBC4027	Establish a basis for sales consulting
CPCBC4028	Prepare design brief for construction works
CPCBC4029	Apply construction information to the sales process
CPCBC4030	Analyse and communicate industry information
CPCBC4032	Apply contract law to the sales process
CPCBC4033	Maintain the sales environment
CPCSUS4001	Implement and monitor environmentally sustainable work practices

Prerequisite requirements

Unit of competency	Prerequisite requirement
CPCBC4010 Apply structural principles to residential and commercial constructions	CPCBC4053 Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings CPCBC4001 Apply building codes and standards to the construction process for Class 1 and 10 buildings

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC40320 Certificate IV in Building Project	CPC40308 Certificate IV in Building and	Supersedes and is equivalent to CPC40308	E

Support	Construction (Estimating)	<p>Certificate IV in Building and Construction (Estimating).</p> <p>Change of qualification title.</p> <p>Change to qualification structure and packaging rules in relation to core and elective units.</p> <p>Updated to meet the Standards for Training Packages 2012.</p>	
CPC40320 Certificate IV in Building Project Support	CPC40208 Certificate IV in Building and Construction (Contract Administration)	<p>Supersedes and is equivalent to CPC40208 Certificate IV in Building and Construction (Contract Administration).</p> <p>Change of qualification title.</p> <p>Change to qualification structure and packaging rules in relation to core and elective units.</p> <p>Updated to meet the Standards for Training Packages 2012.</p>	E

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC40820 Certificate IV in Swimming Pool and Spa Building

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes but is not equivalent to CPC40808 Certificate IV in Swimming Pool and Spa Building. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification reflects work undertaken by individuals who build and install swimming pools and spas. The work covers a range of trade-related skills associated with in-ground and above-ground pools and spas, as well as planning and project management skills.

Completion of the general induction training program specified by the National Code of Practice for Induction Training for Construction Work (ASCC 2007) is required before entering a construction work site. Achievement of the unit *CPCCWHS1001* Prepare to work safely in the construction industry covers this requirement.

Licensing, legislative, regulatory and certification requirements will vary across states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 18 units of competency:
 - 8 core units
 - 10 elective units

The elective units must be selected as follows:

- 6 units must be selected from Group A
- up to 4 units can be selected from Group B
- 1 unit can be selected from any current training package or accredited course if it maintains the integrity of the AQF level of this qualification, contributes to a valid, industry-supported vocational outcome and does not duplicate the outcome of another unit used to achieve this qualification.

Core units

- CPCCBBC4002 Manage work health and safety in the building and construction workplace
- CPCCBBC4004 Identify and produce estimated costs for building and construction projects
- CPCCBBC4005 Produce labour and material schedules for ordering
- CPCCBBC4007 Plan building and construction work
- CPCCBBC4012 Read and interpret plans and specifications
- CPCCBBC4021 Minimise waste on the building and construction site
- CPCSPS4001 Investigate and prepare swimming pool site
- CPCSPS4002 Select, procure and store construction materials for swimming pool and spa projects

Group A: Specialist Trade Skills elective units

- CPCCCM3005 Calculate costs of construction work
- CPCCON3046 Repair and rectify concrete
- CPCCCO4001 Supervise concreting work
- CPCCWHS200
1 Apply WHS requirements, policies and procedures in the construction industry
- CPCCCWF3008 Tile pools and spas
- CPCSPS4003 Install swimming pool and spa subsoil drainage
- CPCSPS4004 Install swimming pool and spa circulation systems and components
- CPCSPS4005 Install prefabricated fibreglass swimming pools
- CPSSPS4006 Apply sprayed concrete to shape and finish swimming pools and spas
- CPCSPS4007 Commission ancillary swimming pool and spa systems and hand over to client
- CPCSPS4008 Install above-ground swimming pools
- CPCSPS4009 Undertake interior finishing of swimming pools and spas

- CPCSPS4010 Lay swimming pool and spa coping
- CPCSPS4011 Install precast concrete swimming pools
- CPPSPS4017 Detect leaks in swimming pools and spas

Group B: Business Skills elective units

- BSBOPS304 Deliver and monitor a service to customers
- BSBPMG422 Apply project quality management techniques
- BSBPMG430 Undertake project work
- BSBESB305 Address compliance requirements for new business ventures
- BSBESB402 Establish legal and risk management requirements of new business ventures
- BSBLDR4014 Lead team effectiveness
- BSBESB406 Establish operational strategies and procedures for new business ventures
- BSBESB407 Manage finances for new business ventures
- BSBSUS411 Implement and monitor environmentally sustainable work practices
- CPCCBC4003 Select, prepare and administer a construction contract
- CPCCBC4024 Resolve business disputes

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC40820 Certificate IV in Swimming Pool and Spa Building	CPC40808 Certificate IV in Swimming Pool and Spa Building	Supersedes but is not equivalent to CPC40808 Certificate IV in Swimming Pool and Spa Building. Updated to meet the Standards for Training Packages 2012.	NE

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC40920 Certificate IV in Plumbing and Services

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Change of unit title CPCPWT3027 Connect irrigation systems from drinking water service in Group B electives to CPCPWT3027 Install backflow prevention devices.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Typographical error rectified in unit CPCPWT4023. Removed word 'test' from unit title in Group B electives.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPC40912 Certificate IV in Plumbing and Services. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification reflects the role of an experienced plumbing service operator with advanced technical skills and/or responsibility for project design and supervision; or a hydraulic consultant responsible for designing hydraulic components and systems that meet client requirements and help in effective water management in domestic, commercial and industry contexts.

Occupational titles could include:

- Plumbing contractor
- Hydraulic designer

The plumbing industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or closely simulated workplace environment and this qualification requires all units of competency to be delivered and assessed in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required before entering a construction work site. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

This is a licenced occupation in some jurisdictions. Licensing, legislative, regulatory and certification requirements may vary between states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Entry Requirements

For the operations stream, a candidate must hold a Certificate III in Plumbing or be authorised to undertake plumbing work by an Australian regulator/licensing body.

There are no entry requirements for the hydraulic services design pathway.

Packaging Rules

To be awarded this qualification, competency must be achieved in:

- 15 units of competency:
 - 10 core units
 - 5 elective units.

For the award of the *CPC40920 Certificate IV in Plumbing and Services (Hydraulic services design)* electives are to be selected as follows:

- 15 units of competency:
 - 10 core units
 - 5 elective units from Group A
 - 2 units may be replaced by units from other Training Packages or nationally accredited courses at Certificate IV level and above, provided they do not duplicate the outcome of another unit chosen for the qualification.
 - Electives cannot be selected from Group B.

For the award of the *CPC40920 Certificate IV in Plumbing and Services (Operations)* electives are to be completed as follows:

- 15 units of competency:
 - 10 core units
 - at least 1 elective from Group B
 - the remaining 4 elective units from Group A or Group B
 - 2 units may be replaced by units from other Training Packages or nationally accredited courses at Certificate IV level and above, provided they do not duplicate the outcome of another unit chosen for the qualification.

The elective units must ensure the integrity of the AQF alignment and contribute to a valid, industry-supported vocational outcome.

An asterisk (*) against a unit code below indicates that the unit has a prerequisite. Please check the unit for information on this. All prerequisites are packaged in the qualification.

Core Units

BSBESB402	Establish legal and risk management requirements of new business ventures
CPCCB4012	Read and interpret plans and specifications

CPCPCM4011	Carry out work-based risk control processes
CPCPCM4012	Estimate and cost work
CPCPCM4015	Access and interpret regulatory requirements for the plumbing and services industry
CPCPDR4011	Design and size sanitary drainage systems
CPCPDR4012	Design and size stormwater drainage systems
CPCPGS4011	Design and size consumer gas installations
CPCPSN4011	Design and size sanitary plumbing systems
CPCPWT4011	Design and size heated and cold-water services and systems

Group A

BSBESB403	Plan finances for new business ventures
CPCCBC4002	Manage work health and safety in the building and construction workplace
CPCCBC4019	Apply sustainable building design principles to water management systems
CPCCBC4024	Resolve business disputes
CPCPCM4013	Produce 2-D architectural drawings using design software
CPCPDR4013	Design and size domestic treatment plant disposal systems
CPCPPS5033*	Design vacuum sewerage systems
CPCPFS4024*	Design residential fire sprinkler systems
CPCPMS4011	Design, size and lay out heating and cooling systems
CPCPMS4023	Design compressed air systems
CPCPRF4011	Design and size roof drainage systems

Group B

CPCPCM2043	Carry out WHS requirements
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CPCPDR3023*	Install on-site domestic wastewater treatment plants and disposal systems
CPCPFS3037*	Install residential life safety sprinkler systems
CPCPFS4021	Commission domestic and residential fire suppression sprinkler systems
CPCPGS3053	Disconnect and reconnect Type A gas appliances
CPCPGS4022*	Service Type A gas appliances
CPCPGS4023*	Install, commission and service Type B gas appliances
CPCPMS4022*	Commission air and water systems
CPCPWT3022*	Install and commission water heating systems and adjust controls and devices
CPCPWT3027*	Install backflow prevention devices
CPCPWT4022*	Commission and maintain backflow prevention devices
CPCPWT4023*	Commission and maintain hot and heated water temperature control devices
UEERL0004	Disconnect-reconnect electrical equipment connected to low voltage (LV) installation wiring

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package	CPC08 Construction, Plumbing and Services Training Package	Comments	E/N E
CPC40920 Certificate IV in Plumbing and Services	CPC40912 Certificate IV in Plumbing and Services	Supersedes and is not equivalent to CPC40912 Certificate IV in Plumbing and Services. Updated to meet the Standards for Training Packages 2012.	N

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC41020 Certificate IV in Demolition

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Inclusion of CPCCWH2001 Apply WHS requirements, policies and procedures in the construction industry to the General Elective units.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC41013 Certificate IV in Demolition.

Qualification Description

This qualification is designed to meet the needs of project engineers, project managers, demolition supervisors and leading hands responsible for the oversight of a team of demolition workers undertaking specialist demolition work on large public, commercial, industrial or residential buildings, structures and installations, including chemical processing plants.

Occupational titles could include:

- Demolition supervisor
- Demolition project manager

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Please consult with the relevant regulatory authorities.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 15 units of competency:
 - 8 core units
 - 7 elective units.

Elective units are to be selected as follows:

- all 7 elective units can be selected from the electives below
- up to 2 units can be selected from any training package or accredited course, as long as they contribute to a valid, industry-supported vocational outcome and supports the AQF level of this qualification.

Prerequisite units of competency

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit/s must be assessed before assessment of any unit of competency with an asterisk. All prerequisite requirements are packaged in the qualification.

Core units

BSBLDR414	Lead team effectiveness
CPCCBBC4002	Manage work health and safety in the building and construction workplace
CPCCBBC4012	Read and interpret plans and specifications
CPCCCDE4001	Plan and prepare for activities on demolition sites
CPCCCDE4002	Plan demolition work to minimise risk to health, safety and environment
CPCCCDE4003	Supervise operational activities on demolition sites
CPCCCDE4004	Finalise demolition activities and supervise property handover
CPCCCDE4005	Apply structural principles to the planning of the demolition of a structure

Elective units

BSBCMM411	Make a presentation
BSBPEF501	Manage personal and professional development
CPCCBBC4004	Identify and produce estimated costs for building and construction projects
CPCCBBC4008	Supervise communication and administration processes for building and construction projects
CPCCBBC4009	Apply legal requirements to building and construction projects

CPCBC4024	Resolve business disputes
CPCBC4053	Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings
CPCBC5001	Apply building codes and standards to the construction process for Type B construction
CPCBC5018*	Apply structural principles to the construction of buildings up to three storeys
CPCBC6014	Apply structural principles to the construction of large, high-rise and complex buildings
CPCDE3014*	Remove non-friable asbestos
CPCDE3015*	Remove friable asbestos
CPCDE3027	Read and interpret demolition site plans and drawings
CPCDE4006	Demolish stressed panel structure and pre-cast panel structure
CPCDE4007	Manage waste streams
CPCDE4008*	Supervise asbestos removal
CPCDE5001	Conduct air monitoring and clearance inspections for asbestos removal work
CPCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
PUAFER004	Respond to facility emergencies
RIICWD503E	Prepare traffic management plans and traffic guidance schemes
RIIWHS301E	Conduct safety and health investigations

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/EN
CPC41020 Certificate IV in Demolition	CPC41013 Certificate IV in Demolition	Supersedes and is equivalent to CPC41013 Certificate IV in	E

		Demolition. Updated to meet the Standards for Training Packages 2012.	
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Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC50220 Diploma of Building and Construction (Building)

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC50210 Diploma of Building and Construction (Building). Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification reflects the role of building professionals who apply knowledge of structural principles, risk and financial management, estimating, preparing and administering building and construction contracts, selecting contractors, overseeing the work and its quality and managing construction work in building projects including residential and commercial with the following limitations:

- Residential construction limited to National Construction Code Class 1 and 10 buildings to a maximum of 3 storeys.
- Commercial construction limited to National Construction Code Class 2 to 9 buildings, Type C and B construction.

Occupational titles may include:

- Builder
- General Foreperson
- Building Inspector

The construction industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or very closely simulated workplace environment. To achieve this qualification, the candidate must have access to a live building and construction workplace to meet the requirements detailed in the Assessment Requirements of core unit *CPCBC4008 Supervise communication and administration processes for building and construction projects*.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Builder licensing varies across States and Territories and requirements additional to the attainment of this qualification may be required.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 27 units of competency:
 - 24 core units
 - 3 elective units
- a maximum of one unit may be from any training package or accredited course as long as it ensures the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contributes to a valid, industry supported vocational outcome.

Prerequisite units

An asterisk (*) next to the unit code indicates that there are prerequisite requirements which must be met when packaging the qualification. Please refer to the Prerequisite requirements table for details.

Core Units

BSBOPS504	Manage risk
BSBWHS513	Lead WHS risk management
CPCCCBC4001	Apply building codes and standards to the construction process for Class 1 and 10 buildings
CPCCCBC4003	Select, prepare and administer a construction contract
CPCCCBC4004	Identify and produce estimated costs for building and construction projects
CPCCCBC4005	Produce labour and material schedules for ordering
CPCCCBC4008	Supervise site communication and administration processes for building and construction projects
CPCCCBC4009	Apply legal requirements to building and construction projects
CPCCCBC4010*	Apply structural principles to residential and commercial constructions
CPCCCBC4012	Read and interpret plans and specifications
CPCCCBC4013	Prepare and evaluate tender documentation
CPCCCBC4014	Prepare simple building sketches and drawings

CPCCCBC4018	Apply site surveys and set-out procedures to building and construction projects
CPCCCBC4053	Apply building codes and standards to the construction process for Class 2 to 9, Type C buildings
CPCCCBC5001	Apply building codes and standards to the construction process for Type B construction
CPCCCBC5002	Monitor costing systems on complex building and construction projects
CPCCCBC5003	Supervise the planning of onsite building and construction work
CPCCCBC5005	Select and manage building and construction contractors
CPCCCBC5007	Administer the legal obligations of a building and construction contractor
CPCCCBC5010	Manage construction work
CPCCCBC5011	Manage environmental management practices and processes in building and construction
CPCCCBC5013	Manage professional technical and legal reports on building and construction projects
CPCCCBC5018*	Apply structural principles to the construction of buildings up to 3 storeys
CPCCCBC5019	Manage building and construction business finances

Elective Units

BSBPMG532	Manage project quality
BSBPMG538	Manage project stakeholder engagement
CPCCCBC4052	Lead and manage teams in the building and construction industry
CPCCCBC5004	Supervise and apply quality standards to the selection of building and construction materials
CPCCCBC5006	Apply site surveys and set-out procedures to building projects up to three storeys
CPCCCBC5009	Identify services layout and connection methods for Type C and B

	construction
CPCCCBC5012	Manage the application and monitoring of energy conservation and management practices and processes
CPCCCBC6001	Apply building codes and standards to the construction process for large building projects
CPCCCDE5001	Conduct air monitoring and clearance inspections for asbestos removal work
CPCSUS5001	Develop workplace policies and procedures for sustainability
CPCSUS5002	Develop action plans to retrofit existing buildings for energy efficiency
CPCSUS5003	Manage energy efficient building methods and strategies
CPPDSM5022A	Implement asset management plan

Prerequisite requirements

Unit of competency	Prerequisite requirement
CPCCCBC5018 Apply structural principles to the construction of buildings up to 3 storeys	CPCCCBC5001 Apply building codes and standards to the construction process for Type B construction CPCCCBC4053 Apply building codes and standards to the construction process for Class 2 to 9, Type C buildings
CPCCCBC4010 Apply structural principles to residential and commercial constructions	CPCCCBC4053 Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings CPCCCBC4001 Apply building codes and standards to the construction process for Class 1 and 10 buildings

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/N E

CPC50220 Diploma of Building and Construction (Building)	CPC50210 Diploma of Building and Construction (Building)	<p>Supersedes and is equivalent to CPC50210 Diploma of Building and Construction (Building).</p> <p>Increase in total number of units for qualification outcome.</p> <p>Changes to core and elective units and packaging rules.</p> <p>Updated imported core and elective units to current versions.</p> <p>Updated to meet the Standards for Training Packages 2012.</p>	E
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Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC50320 Diploma of Building and Construction (Management)

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.

Addition of 3 units of competency to the General Electives:

- CPCBIM4001 Plan to comply with BIM requirements for construction work.
- CPCBIM4002 Use BIM processes to carry out construction work
- CPCBIM4003 Contribute to BIM deliverables for construction work.

Updated imported elective unit from CPPBDN5012A Produce and present 3-D models of small-scale building designs to CPPBDN5101 Produce digital 3-D models of building designs.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to titles for imported elective units BSBOPS502 and BSBOPS505. Imported elective units BSBLDR522 Manage people performance and BSBLDR523 Lead and manage effective workplace relationships removed from Elective units.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent CPC50308 Diploma of Building and Construction (Management). Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification is designed to meet the needs of senior managers within building and construction firms.

Occupational titles may include:

- Project manager
- Construction manager
- Estimating manager
- Sales manager.

The construction industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or very closely simulated workplace environment and this qualification requires all units of competency to be delivered in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001* Prepare to work safely in the construction industry meets this requirement.

Additional units of competency may be required to meet builder or project manager registration requirements in various States and Territories.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 15 units of competency:
 - 8 core units
 - 7 elective units.

The elective units are to be chosen as follows:

- up to 7 units from general elective units
- a maximum of two units may be from any training package or accredited course as long as they ensure the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contribute to a valid, industry supported vocational outcome

Prerequisite units

An asterisk (*) next to the unit code indicates that there are prerequisite requirements which must be met when packaging the qualification. Please refer to the Prerequisite requirements table for details.

Prerequisite requirements

Unit of competency	Prerequisite requirement
CPCCBC5018 Apply structural principles to the construction of buildings up to 3 storeys	CPCBC5001 Apply building codes and standards to the construction process for Type B construction CPCCBC4053 Apply building codes and standards to the construction process for Class 2 to 9, Type C buildings

Core Units

BSBPMG536	Manage project risk
BSBWHS513	Lead WHS risk management
CPCCCBC4001	Apply building codes and standards to the construction process for Class 1 and 10 Buildings
CPCCCBC4053	Apply building codes and standards to the construction process for Class 2 to 9, Type C Buildings
CPCCCBC5002	Monitor costing systems on complex building and construction projects
CPCCCBC5005	Select and manage building and construction contractors
CPCCCBC5007	Administer the legal obligations of a building or construction contractor
CPCCCBC5019	Manage building and construction business finances

Elective Units

BSBHRM415	Coordinate recruitment and onboarding
BSBOPS502	Manage business operational plans
BSBOPS505	Manage organisational customer service
BSBPEF502	Develop and use emotional intelligence
BSBPMG532	Manage project quality
CPCBIM4001	Plan to comply with BIM requirements for construction work
CPCBIM4002	Use BIM processes to carry out construction work
CPCBIM4003	Contribute to BIM deliverables for construction work
CPCCCBC4003	Select, prepare and administer construction contract
CPCCCBC4004	Identify and produce estimated costs for building and construction projects
CPCCCBC4052	Lead and manage teams in the building and construction industry
CPCCCBC5001	Apply building codes and standards to the construction process for Type B construction
CPCCCBC5003	Supervise the planning of onsite building or construction work

CPCCBBC5004	Supervise and apply quality standards to the selection of building and construction materials
CPCCBBC5006	Apply site surveys and set-out procedures to building projects up to 3 storeys
CPCCBBC5009	Identify services layout and connection methods for Type B and C construction
CPCCBBC5010	Manage construction work
CPCCBBC5011	Manage environmental management practices and processes in building and construction
CPCCBBC5012	Manage the application and monitoring of energy conservation and management practices and processes
CPCCBBC5013	Develop professional technical and legal reports on building and construction projects
CPCCBBC5018*	Apply structural principles to the construction of buildings up to 3 storeys
CPCSUS5001	Develop workplace policies and procedures for sustainability
CPPBDN5101	Produce digital 3-D models of building designs
CPPDSM5022A	Implement asset management plan

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC50320 Diploma of Building and Construction (Management)	CPC50308 Diploma of Building and Construction (Management)	Supersedes and is not equivalent CPC50308 Diploma of Building and Construction (Management). Significant changes to the packaging rules. Updated to meet the Standards for Training Packages 2012.	NE

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC50520 Diploma of Fire Systems Design

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC50509 Diploma of Fire Systems Design. Updated to meet the Standards for Training Packages 2012.

Qualification Description

The Diploma of Fire Systems Design reflects and supports the role of fire systems designers who prepare detailed technical designs and documentation for water-based fire suppression systems and/or fire detection and occupant warning systems.

The Diploma of Fire Systems Design also includes a stream qualification for the annual certifier of fire systems.

Fire systems designers may enter the industry from a diverse range of occupations and sectors. They may choose to extend their careers by seeking to undertake subsequent higher education qualifications in related disciplines, including mechanical engineering and fire engineering.

The qualification has common core and elective unit of competency requirements that cover common skills for fire systems designers and certifiers, as well as specialist streams for:

- water-based systems
- detection and warning systems
- annual certifiers.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in 12 units of competency:

- 4 core units
- 8 elective units.

The elective units are to be chosen as follows.

All units from one of the specialisations (Group A, B or C) must be completed. That is:

- all 8 units from *Group A Water-based systems*, or

- all 5 units from *Group B Detection and warning systems* plus 3 additional electives, or
- all 4 units from *Group C Annual certifier* plus 4 additional electives.

The additional electives must ensure the integrity of the AQF alignment and contribute to a valid, industry-supported vocational outcome. Of these, 1 unit can be selected from any endorsed Training Package or accredited course at a Diploma or higher AQF level. One unit can be selected from Group A in the Certificate IV in Plumbing and Services. The remainder are to come from groups A, B, C or D listed below.

An asterisk (*) against a unit code below indicates that the unit has a prerequisite. Please check the unit for information on this. All prerequisites are packaged in the qualification.

Core units

CPCCWHS2001	Apply WHS requirements, policies and procedures in the construction industry
CPCSFS5001	Define scope and hazard level of fire systems design projects
CPCSFS5002	Research and interpret detailed fire systems design project requirements
CPCSFS5005	Research and evaluate fire system technologies and components

Group - A Water-based systems elective unit

CPCPCM4013	Produce 2D architectural drawings using design software
CPCSFS5003	Develop plans and methodology for fire systems design projects
CPCSFS5006	Create detailed designs for fire sprinkler systems
CPCSFS5007	Create detailed designs for hydrant and hose reel systems
CPCSFS5009	Create detailed designs for fire systems' water supplies
CPCSFS5010	Provide documentation and support for fabrication of fire sprinkler systems
CPCSFS5011	Provide design documentation and review and support fire system installation processes
CPCSFS5013	Support commissioning processes and finalise fire systems design projects

Group B - Detection and warning systems elective units

CPCPCM4013	Produce 2-D architectural drawings using design software
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CPCSFS5003	Develop plans and methodology for fire systems design projects
CPCSFS5008	Create detailed designs for fire detection and warning systems
CPCSFS5011	Provide design documentation and review and support fire system installation processes
CPCSFS5013	Support commissioning processes and finalise fire systems design projects

Group C - Annual certifier elective units

BSBAUD513	Report on a quality audit
CPCCBC4012	Read and interpret plans and specifications
CPCSFS5014	Conduct annual fire systems certification inspections
CPCSFS5015	Assess documentation for annual fire systems certification inspections

Group D - General elective units

BSBOPS404	Implement customer service strategies
BSBOPS505	Manage organisational customer services
BSBPMG535	Manage project information and communication
BSBPMG430	Undertake project work
BSBWHS513	Lead WHS risk management
CHCDIV001	Work with diverse people
CPCCBC4012	Read and interpret plans and specifications
CPCCBC5009	Identify services layout and connection methods to medium rise construction projects
CPCCSV5009*	Assess the impact of fire on building materials
CPCPCM3024	Prepare simple sketches and drawings
CPCPCM4013	Produce 2-D architectural drawings using design software

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC50520 Diploma of Fire Systems Design	CPC50509 Diploma of Fire Systems Design	Supersedes and is equivalent to CPC50509 Diploma of Fire Systems Design. Updated to meet the Standards for Training Packages 2012.	E

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC50620 Diploma of Hydraulic Services Design

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC50612 Diploma of Hydraulic Services Design. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification reflects the role of a specialist hydraulic design consultant who designs plumbing and services systems in domestic, commercial and industrial contexts. The qualification includes the skills and knowledge to design complex hydraulic systems.

Occupational titles could include:

- Hydraulic design consultant.

The plumbing industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or closely simulated workplace environment and this qualification requires all units of competency to be delivered and assessed in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required before entering a construction work site. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this qualification at the time of publication. This qualification does not meet competency requirements for plumbing licencing or registration.

Entry Requirements

CPC40920 Certificate IV in Plumbing and Services or

CPC40912 Certificate IV in Plumbing and Services and CPCPCM4015 Access and interpret regulatory requirements for the plumbing and services industry

Packaging Rules

To be awarded this qualification, competency must be achieved in:

- 18 units of competency:
 - 14 core units
 - 4 elective units.

The elective units must ensure the integrity of the AQF alignment and contribute to a valid, industry-supported vocational outcome and are to be chosen as follows:

- 3 elective units must be chosen from the elective units listed below
- 1 elective unit may be selected from any other group or from any relevant nationally endorsed Training Package or accredited course.

An asterisk (*) against a unit code below indicates that the unit has a prerequisite. Please check the unit for information on this. All prerequisites are packaged in the qualification.

Core Units

CPCPCM5010	Design complex sanitary plumbing and drainage systems
CPCPCM5011	Design complex cold water systems
CPCPCM5012	Design complex stormwater and roof drainage systems
CPCPCM5013	Design complex (non-solar) heated water systems
CPCPPS5002	Design gas reticulation systems
CPCPPS5023	Design solar water heating systems
CPCPPS5024	Conduct a water audit and identify water-saving initiatives
CPCPPS5025	Design grey water re-use systems
CPCPPS5026	Design rainwater collection, storage, distribution and re-use systems
CPCPPS5028	Design trade waste pre-treatment systems
CPCPPS5030	Design pump systems
CPCPPS5032	Design siphonic stormwater drainage systems
CPCSFS5001	Define scope and hazard level of fire systems design projects
CPCSFS5007	Create detailed designs for hydrant and hose reel systems

Elective Units

BSBTEC201	Use business software applications
BSBWRT411	Write complex documents

CPCPCM2043	Carry out WHS requirements
CPCPCM3024	Prepare simple drawings
CPCPCM4013	Produce 2-D architectural drawings using design software
CPCPDR3025*	Plan layout and install vacuum drainage systems
CPCPFS5011	Design fire sprinkler systems
CPCPMS5010	Design steam generation and distribution systems
CPCPMS5011	Design air conditioning and ventilation systems
CPCPMS5012	Design sound attenuated hydraulic services
CPCPMS5013	Design hydronic heating and cooling systems
CPCPPS5014	Locate and maintain piping systems
CPCPPS5015	Inspect plumbing and drainage systems
CPCPPS5027	Design irrigation systems
CPCPPS5033*	Design vacuum drainage systems
CPCSUS5001	Develop workplace policies and procedures for sustainability

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC50620 Diploma of Hydraulic Services Design	CPC50612 Diploma of Hydraulic Services Design	Supersedes and is equivalent to CPC50612 Diploma of Hydraulic Services Design. Updated to meet the Standards for Training Packages 2012.	E

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC60121 Advanced Diploma of Building Surveying

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is equivalent to CPC60115 Advanced Diploma of Building Surveying.

Qualification Description

This is a qualification for building surveyors or certifiers who apply knowledge of compliance requirements and construction methods and materials to the implementation of statutory building surveying requirements or to the provision of advisory building surveying services.

The scope of work undertaken by building surveyors applies to all Classes of residential and commercial buildings as defined in the National Construction Code (NCC), up to three storeys and not exceeding 2,000 square metres in floor area.

Building surveyors work in a highly regulated environment and require an understanding of relevant compliance requirements as well as traditional, new and emerging construction methods and materials. They make a significant contribution to the development and construction of the built environment, often working in collaboration with specialist consultants to assess and verify that proposed and actual building works are compliant and to ensure the safety of building occupants.

Licensing, legislative, regulatory or certification requirements apply to building surveying in some states and territories. For further information, check with the relevant regulatory authority.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, competency must be demonstrated in:

- 22 units of competency:
 - 19 core units
 - 3 elective units.

For the elective units:

- up to 3 units may be selected from the elective units listed below

- up to 2 units may be selected from any currently endorsed Training Package or accredited course at Advanced Diploma, Graduate Certificate or Graduate Diploma level.

An asterisk (*) against a unit code below indicates that there is a prerequisite requirement that must be met. Prerequisite unit(s) must be assessed before assessment of any unit of competency with an asterisk. Check the unit of competency for information on specific prerequisite requirements. All prerequisite requirements are packaged in the qualification.

Core units

CPCCBBC4001	Apply building codes and standards to the construction process for Class 1 and 10 buildings
CPCCBBC4010*	Apply structural principles to residential and commercial constructions
CPCCBBC4012	Read and interpret plans and specifications
CPCCBBC4053	Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings
CPCCBS6101	Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys
CPCCBS6102	Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys
CPCCBS6103	Identify and apply legal and ethical requirements to building surveying functions
CPCCBS6104*	Assess and advise on compliance of design documentation for Class 1 and 10 buildings to three storeys
CPCCBS6105*	Assess and advise on compliance of design documentation for Class 2 to 9 buildings to three storeys
CPCCBS6107	Prepare planning and development applications for buildings to three storeys
CPCCBS6108*	Process building applications for Class 1 and 10 buildings to three storeys
CPCCBS6109*	Process building applications for Class 2 to 9 buildings to three storeys
CPCCBS6110*	Conduct and report on building surveying audits of Class 1 and 10 buildings to three storeys
CPCCBS6112*	Conduct and report on initial construction inspections of Class 1 and 10 buildings to three storeys

CPCCBS6113*	Conduct and report on initial construction inspections of Class 2 to 9 buildings to three storeys
CPCCBS6114*	Conduct and report on advanced and final inspections of Class 1 and 10 buildings to three storeys
CPCCBS6115*	Conduct and report on advanced and final inspections of Class 2 to 9 buildings to three storeys
CPCCBS6116*	Assess and advise on performance solutions for Class 2 to 9 buildings to three storeys
CPCCBS6118*	Assess and advise on performance solutions for Class 1 and 10 buildings to three storeys

Elective units

CPCCBS6111*	Conduct and report on building surveying audits of Class 2 to 9 buildings to three storeys
CPCCBS6117*	Monitor and advise on construction and compliance upgrade work on buildings to three storeys
CPPACC6002A	Apply performance-based codes and risk management principles to assessing buildings for access
CPPACC6003A	Apply unjustifiable hardship principles to Alternative Building Solutions for access
CPPHES4005	Assess household energy use and efficiency improvements
CPPHES4007	Assess thermal performance of existing residential buildings
PUAFIR518	Conduct and record a Bushfire Attack Level (BAL) assessment

Qualification Mapping Information

CPC60121 Advanced Diploma of Building Surveying supersedes and is equivalent to CPC60115 Advanced Diploma of Building Surveying.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPC60220 Advanced Diploma of Building and Construction (Management)

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Mapping statement corrected. General elective units listed alphanumerically.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC60212 Advanced Diploma of Building and Construction (Management). Update to core unit. Updated to meet the Standards for Training Packages 2012.

Qualification Description

This qualification is designed to meet the needs of builders or senior managers within the building and construction industry who apply knowledge of building, construction and sustainability systems and processes, structural principles, codes, standards and legal obligations to construction projects including high rise.

Occupational titles may include:

- Construction manager.

The construction industry strongly affirms that training and assessment leading to recognition of skills must be undertaken in a real or very closely simulated workplace environment and this qualification requires all included units of competency to be delivered in this context.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Builder licensing varies across States and Territories and requirements additional to the attainment of this qualification may be required. Additional or prescribed units of competency may also be required to meet builder registration requirements in various States and Territories.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To achieve this qualification, the candidate must demonstrate competency in:

- 10 units of competency:
 - 4 core units
 - 6 elective units.

The elective units are to be chosen as follows:

- up to 6 units from general elective units
- a maximum of two units may be from any training package or accredited course as long as they ensure the integrity of the qualification's Australian Qualification Framework (AQF) alignment and contribute to a valid, industry supported vocational outcome.

Core Units

BSBWHS516	Contribute to developing, implementing and maintaining an organisation's WHS management system
CPCCCBC6001	Apply building codes and standards to the construction process for large building projects
CPCCCBC6003	Establish, maintain and review contract administration procedures and frameworks
CPCCCBC6018	Manage processes for complying with legal obligations of a building and construction contractor

Elective Units

BSBMKG623	Develop a marketing plan
BSBOPS504	Manage risk
BSBOPS601	Develop and implement a business plan
CPCCCBC6002	Generate and direct the development of new projects
CPCCCBC6005	Manage tender developments for major projects
CPCCCBC6006	Manage the procurement and acquisition of resources for building and construction projects
CPCCCBC6007	Develop, plan and implement building and construction environmental management processes
CPCCCBC6008	Develop and implement an estimating and tendering system

CPCCCBC6009	Develop, plan and implement a building and construction planning process
CPCCCBC6010	Plan, develop and implement building and construction energy conservation and management processes
CPCCCBC6011	Establish systems to develop and monitor building and construction costs
CPCCCBC6012	Manage and administer development of documentation for building and construction projects
CPCCCBC6013	Evaluate concrete performance for multi-storey buildings
CPCCCBC6014	Apply structural principles to the construction of large, high-rise and complex buildings
CPCCCBC6015	Apply building surveying procedures
CPCCCBC6016	Assess construction faults in large building projects
CPCCCBC6017	Evaluate services layout and connection methods for the planning of large building projects
CPCSUS5001	Develop workplace policies and procedures for sustainability
CPPDSM6002A	Conduct a property investment feasibility study
CPPDSM6008A	Develop strategic facilities management plan

Qualification Mapping Information

CPC Construction, Plumbing and Services Training Package Release 5.0	CPC08 Construction, Plumbing and Services Training Package	Comments	E/NE
CPC60220 Advanced Diploma of Building and Construction (Management)	CPC60212 Advanced Diploma of Building and Construction (Management)	Supersedes and is equivalent to CPC60212 Advanced Diploma of Building and Construction (Management). Update to core unit. Updated to meet the Standards for Training Packages 2012.	E

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBIM4001 Plan to comply with BIM requirements for construction work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to recognise a project's Building Information Modelling (BIM) requirements and plan subsequent activities related to own construction work. It includes preparing the tools and technologies required to enable digital processes such as accessing and comparing 2D drawings and 3D models and related data.

The unit applies to builders, tradespersons, project and site managers who work on construction projects that incorporate BIM interaction, collaboration and deliverables. It requires digital literacy skills to use software via information and communication technology (ICT), including applications on mobile devices to find, retrieve and communicate information.

A person who has achieved this unit of competency is able to work with autonomy and take responsibility for applying BIM processes to construction work.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Business information modelling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Determine BIM requirements for construction work activities. | 1.1 Access and interpret BIM Execution Plan to clarify BIM uses for construction project, specific work standards and methodologies. |
| | 1.2 Identify any gaps in the BIM Execution Plan relating to BIM activities required or already incorporated in the construction project. |
| | 1.3 Access, interpret and clarify available drawings, data and models within Common Data Environment (CDE) for collaborative project requirements. |
| | 1.4 Identify BIM tools and technologies required to comply with BIM Execution Plan. |
| | 1.5 Clarify BIM-required communication methods, roles and responsibilities of self and other project participants detailed in BIM Execution Plan. |
| 2 Prepare BIM tools and technologies. | 2.1 Access tools and technologies required to fulfil the BIM uses, standards and methodologies according to BIM Execution Plan. |
| | 2.2 Set up BIM tools and technologies according to project requirements. |
| | 2.3 Review BIM tools and technologies to ensure correct operation and interoperability with BIM systems for construction work. |
| 3 Access and compare 2D and 3D construction information. | 3.1 Access 2D drawings, 3D model and data relevant to construction work. |
| | 3.2 Use BIM tools and technologies to navigate and interpret 3D model and data, conduct measurements, enquire and extract data and quantities required for construction work. |
| | 3.3 Compare 3D model and data against 2D drawings to clarify understanding of requirements for planned |

construction work.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- digital literacy skills to use software via ICT, including applications on mobile devices to find, retrieve and communicate information.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBIM4001 Plan to comply with BIM requirements for construction work

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by planning to ensure that construction work activities comply with Building Information Modelling (BIM) project requirements specified in a BIM Execution Plan and, in doing so:

- use at least two different BIM technologies (tools and software)
- identify own role and responsibilities and that of three other participants in the BIM workflow and detailed in the BIM Execution Plan, including their relationship to the identified BIM uses
- access one 3D model and associated data within a Common Data Environment (CDE) and relevant to planned construction work activities.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- definition and purpose of BIM and its benefits and limitations relating to the lifecycle management of built assets
- common BIM definitions and terminology
- common BIM tools and technologies
- BIM uses relevant to construction phases
- commonly understood meanings of 3D, 4D, 5D and 6D relating to BIM
- benefits of BIM in improving construction efficiency and safety:
 - planning, scheduling and sequencing
 - services and trades coordination
 - fabrication and assembly
 - resource procurement
 - accurate ordering of materials and quantities
- BIM maturity levels
- BIM adoption barriers
- BIM project delivery methods

- BIM standards relevant to planned construction work, including the BIM ISO 19650 *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling* (or its successor)
- graphical and data communication methods when working with BIM
- level of information need, incorporating definitions of level of development (LOD) and level of information (LOI) relevant to BIM project requirements
- meaning and benefits of visual communication and extended reality technologies during the construction phase of a BIM project
- meaning and purpose of ‘digital twin’, its relationship with BIM, and its context within the facets of the operations and maintenance phase
- meaning of open formats as distinct from proprietary formats and their role in interoperability and archiving of project information
- purpose and content of BIM Execution Plans and their relationship to project information requirements
- role of the CDE in managing project information
- roles and responsibilities of BIM project participants across multiple disciplines.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation and technologies required to achieve the performance criteria and performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBIM4002 Use BIM processes to carry out construction work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to use Building Information Modelling (BIM) processes to carry out construction work. It includes using 2D drawings and 3D models and related data to clarify construction work requirements, coordinate models and manage risks associated with planned construction work and schedule, and sequence work activities and resources.

The unit applies to builders, tradespersons, project and site managers who work on construction projects that incorporate BIM interaction, collaboration and deliverables. It requires digital literacy skills to use software via information and communication technology (ICT), including applications on mobile devices to find, retrieve and communicate information.

A person who has achieved this unit of competency is able to work with autonomy and take responsibility for applying BIM processes to construction work.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Business information modelling

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Prepare for construction work.
 - 1.1 Identify reporting and documentation processes and protocols to comply with BIM Execution Plan and workplace requirements.
 - 1.2 Identify project participants and clarify roles and responsibilities relevant to planned construction work to meet BIM Execution Plan and workplace requirements.
 - 1.3 Interpret 2D drawings and 3D model and data to clarify scope of construction work and check information to confirm currency.
 - 1.4 Access and assess other documentation related to construction work to ensure full understanding of activities, timeframes and regulatory compliance requirements.
 - 2 Manage risks associated with construction work.
 - 2.1 Use BIM tools and technologies to create and test virtual construction models and detect coordination issues, including clashes associated with planned construction work.
 - 2.2 Use BIM tools and technologies to detect work health and safety (WHS) and regulatory compliance risks associated with planned construction work.
 - 2.3 Consult with project participants to discuss and agree strategies to resolve coordination issues and mitigate risks.
 - 2.4 Implement actions required to resolve coordination issues and mitigate risks associated with planned construction work in accordance with workplace requirements.
 - 3 Schedule and sequence construction work requirements.
 - 3.1 Use BIM data to sequence construction work activities to achieve required efficiencies and compatibilities with other construction disciplines.
 - 3.2 Use BIM data to schedule equipment and resources to meet construction work timeframes in accordance with workplace requirements.

- 3.3 Document and communicate construction work requirements to project participants to meet BIM Execution Plan and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- digital literacy skills to use software via ICT, including applications on mobile devices to find, retrieve and communicate information.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBIM4002 Use BIM processes to carry out construction work

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by using Building Information Modelling (BIM) processes, including at least two different BIM technologies (tools and software) to carry out construction work and, in doing so:

- create and test at least two virtual construction (design) models within the same federated space
- detect coordination and clashing in the federated model based on two different criteria
- detect two work health and safety (WHS) or regulatory compliance risks associated with planned construction work by using a 3D model and visual communication tools
- consult with two other project participants to discuss and agree strategies to resolve model coordination issues and mitigate risks
- analyse and communicate a construction activity using 4D modelling methods.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- BIM project delivery methods
- BIM standards relevant to planned construction work including the BIM ISO 19650 *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) – Information management using building information modelling* (or its successor)
- BIM uses relevant to construction phases
- common BIM tools and technologies
- graphical and data communication methods when working with BIM
- meaning and benefits of visual communication and extended reality technologies during the construction phase of a BIM project
- methods for confirming currency of construction documentation and data
- methods for scheduling equipment and resources for construction work
- methods for sequencing construction work to achieve efficiencies across multi-disciplinary construction projects

- purpose and content of BIM Execution Plans and their relationship to project information requirements
- purpose of virtual construction models and methods for detecting construction coordination issues and other project risks
- role of the Common Data Environment (CDE) in managing project information
- roles and responsibilities of BIM project participants across multiple disciplines
- types of drawings, models and documentation used when conducting construction work that is part of a BIM project
- 4D modelling techniques to record and represent information about the construction sequence
- workplace requirements for conducting construction work using BIM processes:
 - compliance with relevant regulations and standards
 - WHS
 - quality control procedures
 - reporting and documentation.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, technologies, equipment and other resources required to achieve the performance criteria and performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBIM4003 Contribute to BIM deliverables for construction work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to contribute to Building Information Modelling (BIM) deliverables for construction work. It includes confirming handover requirements and deliverables, validating data for completed work, capturing data to record as-built conditions, and contributing information to enable a digital handover.

The unit applies to builders, tradespersons, project and site managers who work on construction projects that incorporate BIM interaction, collaboration and deliverables. It requires digital literacy skills to use software via information and communication technology (ICT), including applications on mobile devices to find, retrieve and communicate information.

A person who has achieved this unit of competency is able to work with autonomy and take responsibility for applying BIM processes to construction work.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Business information modelling

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Confirm deliverables and handover requirements.	<p>1.1 Check plans and relevant documentation to clarify project deliverables and handover requirements to comply with BIM Execution Plan.</p> <p>1.2 Prepare documentation necessary to enable model-based collaboration between project participants.</p> <p>1.3 Consult with project participants to confirm project deliverables, including asset identifiers, tagging, classification and other requirements for digital handover.</p>
2 Validate project information for completed construction work.	<p>2.1 Check completed construction work to confirm compliance with plans, specifications and BIM Execution Plan.</p> <p>2.2 Input information and data required to complete asset register and comply with project requirements for model and data deliverables.</p> <p>2.3 Verify currency and format of Common Data Environment (CDE) information and data associated with completed construction work to meet requirements of BIM Execution Plan.</p> <p>2.4 Implement actions required to address problems with data capture, information currency or format to meet BIM Execution Plan.</p>
3 Finalise handover for construction work.	<p>3.1 Capture data to record ‘as-built’ conditions according to BIM Execution Plan and workplace requirements.</p> <p>3.2 Contribute information to enable digital handover to be finalised to meet BIM Execution Plan, performance, quality, commissioning, regulatory and workplace requirements.</p>

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- digital literacy skills to use software and applications on mobile devices to find, retrieve and communicate information.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBIM4003 Contribute to BIM deliverables for construction work

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit contributing to Building Information Modelling (BIM) deliverables for completed construction work in compliance with project requirements specified in a BIM Execution Plan and, in doing so:

- use at least two different BIM technologies (tools and software)
- identify and correct two problems associated with data capture, information currency and/or format.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- BIM project delivery methods
- BIM standards relevant to planned construction work, including the BIM ISO 19650 *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling* (or its successor)
- BIM uses relevant to construction phases
- common BIM tools and technologies
- common methods for identifying assets in a BIM asset register
- documentation used to enable model-based collaboration between project participants
- graphical and data communication methods when working with BIM
- meaning and benefits of visual communication and extended reality technologies during the construction phase of a BIM project
- meaning and purpose of 'digital twin', its relationship with BIM, and its context within the facets of the operations and maintenance phase
- meaning of open formats as distinct from proprietary formats and their role in interoperability and archiving of project information
- methods for confirming currency of construction documentation and data
- purpose and content of BIM Execution Plans and their relationship to project information requirements

- purpose and components of the Project Information Model (PIM) that can be expected at handover from using BIM tools and workflows for construction projects
- purpose and identification and classification to elements of a BIM model
- role of the Common Data Environment (CDE) in managing project information
- roles and responsibilities of BIM project participants across multiple disciplines
- types of drawings, models and documentation used for a BIM handover
- workplace requirements for finalising construction work to comply with BIM project requirements:
 - compliance with relevant regulations and standards
 - documentation
 - quality control

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, technologies, equipment and other resources required to achieve the performance criteria and performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4001 Apply building codes and standards to the construction process for Class 1 and 10 buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCBC4001A Apply building codes and standards to the construction process for low rise building projects.

CPCBC4001A Apply building codes and standards to the construction process for low rise buildings has been split into two units, one for residential low-rise buildings and one for commercial low-rise buildings.

Attainment of both CPCBC4001 and CPCBC4053 is equivalent to CPCBC4001A.

Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to access, interpret and apply relevant building codes and standards applicable to the National Construction Code (NCC) Classes 1 and 10 buildings, to a maximum of two storeys. It includes knowledge of the structure of the NCC, as well as the ability to access relevant information from the code as applicable to various building projects.

It applies to builders, site managers and related construction industry professionals responsible for ensuring compliance with building codes and standards related to residential construction projects.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Classify building. | 1.1 Determine nature of building, its use and arrangement from construction plans and specifications. |
| | 1.2 Access, read and interpret relevant Australian Standards and codes for residential building and construction projects. |
| | 1.3 Define classification of building from the NCC. |
| | 1.4 Identify and interpret multiple classifications from the NCC. |
| 2 Determine construction compliance requirements. | 2.1 Identify NCC Performance Requirements relevant to Class 1 and 10, up to two storeys, building projects. |
| | 2.2 Determine range of criteria to ensure that construction methods comply with NCC Performance Requirements. |
| | 2.3 Identify and document non-conforming construction methods against NCC Performance Requirements. |
| | 2.4 Propose and discuss Performance Solution with design and building and construction professionals. |
| | 2.5 Analyse and apply Assessment Methods to determine compliance with Performance Solution or Deem-to-Satisfy Solution (DTS). |
| | 2.6 Meet the evidence of suitability requirements for building materials and products stated in the NCC. |
| | 2.7 Complete relevant documentation to meet NCC requirements. |
| 3 Determine fire | 3.1 Identify NCC and other legislative requirements for |

protection requirements.

passive and active fire control elements in buildings.

- 3.2 Determine level of fire resistance required for the construction of various buildings.
- 3.3 Check existing buildings for compliance with passive and active fire protection requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- problem-solving skills to:
 - analyse non-conforming construction methods, define key problem and produce appropriate solution
 - seek clarification of appropriate solution to meet construction method compliance
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCBC4001A Apply building codes and standards to the construction process for low rise building projects.

CPCBC4001A Apply building codes and standards to the construction process for low rise buildings has been split into two units, one for residential low-rise buildings and one for commercial low-rise buildings.

Attainment of both CPCBC4001 and CPCBC4053 is equivalent to CPCBC4001A.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4001 Apply building codes and standards to the construction process for Class 1 and 10 buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCBC4001A Apply building codes and standards to the construction process for low rise building projects.

CPCBC4001A Apply building codes and standards to the construction process for low rise buildings has been split into two units, one for residential low-rise buildings and one for commercial low-rise buildings.

Attainment of both CPCBC4001 and CPCBC4053 is equivalent to CPCBC4001A.

Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying codes and standards to the construction process of one Class 1 or 10 building project, to a maximum of two storeys.

In doing this, the candidate must:

- determine type of construction and use of building from construction plans and specifications and class of building using National Construction Code (NCC) classifications
- identify current building and construction codes and Australian Standards relevant to the building project
- apply NCC Performance Requirements in relation to the design and construction of the building:
 - energy efficiency
 - damp and weatherproofing
 - fire safety
 - health and amenity
 - structure
 - safe movement and access
 - ancillary provisions

- apply Performance Solutions to ensure that construction complies with NCC Performance Requirements
- identify faults and problems and propose actions to rectify
- inspect a building to determine fire protection compliance with NCC and other legislative requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building legislation, codes and standards:
 - the NCC:
 - Performance Requirements and General Requirements
 - Performance Solutions and Assessment Methods
 - Performance Hierarchy
 - evidence of suitability for building materials and products
 - classes of building and types of construction
- organisational policies and procedures, quality systems and best practice approaches
- workplace safety requirements
- properties, characteristics and limitations of specified building materials and components
- processes, procedures and techniques of construction
- basic building design principles and the behaviour of structures under stress, strain, compression, bending or combined actions
- causes and implications of building defects related to failure of applying building codes and standards to residential and commercial buildings
- extent of remedial work required for various defects cause by inadequate design and application of building codes and practices
- environmental requirements and sustainability principles and concepts
- project plans, specifications, working drawings and structural details
- construction terminology.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and construction regulations
- current building and construction codes and standards
- NCC Volume 2

- construction drawings, site plans and specifications
- organisational policies and procedures and other quality documentation to undertake the performance criteria and assessment requirements
- digital technology devices, applications and software to source and document information.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4002 Manage work health and safety in the building and construction workplace

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in Element and Performance Criteria 2.4 corrected.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4002A Manage occupational health and safety in the building and construction workplace. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to inspect workplaces for hazards and conduct work health and safety (WHS) risk analyses. It includes the development and implementation of appropriate responses to mitigate risks to meet government legislation and regulations.

This unit of competency applies to builders, site managers and forepersons who are responsible for the management of risk in building and construction workplaces.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Assess workplace risk. | 1.1 Evaluate construction site safety and identify potential risk areas. |
| | 1.2 Assess on site worker's health and safety. |
| | 1.3 Identify hazards and determine control measures that comply with legislative requirements and organisational policies. |
| | 1.4 Consult with workers to evaluate effectiveness of existing control measures and WHS experts, as necessary, to contribute to an inspection report. |
| | 1.5 Complete a workplace inspection report with recommended actions to minimise workplace incidents and mitigate risk. |
| 2 Establish and implement safety plans. | 2.1 Establish a workplace safety plan incorporating information from the workplace inspection report to raise safety awareness and support safe workplace practices. |
| | 2.2 Implement processes to identify hazards, rate the risks and put control measures in place. |
| | 2.3 Establish educational programs specific to the building and construction workplace to ensure workers carry out safe work practices. |
| | 2.4 Negotiate and resolve safety issues and conflicts. |
| 3 Monitor workplace safety. | 3.1 Monitor and audit workplace safety to ensure compliance with WHS regulations and workplace safety requirements. |
| | 3.2 Record findings and recommend and implement actions to address non-compliance. |

- 3.3 Review effectiveness of educational programs to ensure all workers have been inducted and maintain safe work practices.
- 3.4 Monitor, review and document effectiveness of control measures to determine changes and improvements as required.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4002A Manage occupational health and safety in the building and construction workplace

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4002 Manage work health and safety in the building and construction workplace

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in Element and Performance Criteria 2.4 corrected.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4002A Manage occupational health and safety in the building and construction workplace. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by conducting a workplace safety audit for a construction worksite.

In doing this, a candidate must:

- access and interpret relevant government work health and safety (WHS) legislation and regulations
- identify faults, problems and non-compliances and their impact on workplace safety
- introduce safety systems allowing for ease of reporting safety issues, controlling hazards and maintaining worker safety and competence.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- current WHS Acts and regulations
- relevant safety codes, standards and guidelines
- organisation's workplace safety policies and procedures:
 - workplace safety and reporting requirements
- inspection, auditing and investigation processes
- hazards arising from:
 - high-risk construction work:
 - crane operation
 - dogging and rigging
 - concrete pumping

- tilt-up panel construction
- scaffolding
- operation of plant and equipment
- demolition
- asbestos removal and exposure to asbestos fibres
- exposure to silica
- airborne contaminants
- exposure to excessive noise
- electrical work
- working at heights
- hazardous materials and substances
- working in confined spaces
- safe work practices:
 - emergency, first aid and evacuation procedures
 - waste management and environmental practices
 - personal protective equipment (PPE)
- educational programs:
 - worker site-specific induction training
 - contractor detailed WHS induction
 - WHS induction for visitors
 - Health and Safety Representative (HSR) training
- mental health first aid and welfare of workers
- digital tools and devices to communicate and collaborate effectively with others
- a range of digitally-based technology and applications to access, extract, integrate and compile information.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- WHS legislation and regulations
- safety codes, standards and guidelines
- organisational policies and procedures and other quality documentation required to undertake the performance criteria and assessment requirements
- workplace incident data and incident reports
- business equipment to collect and record data, and produce reports

- digital devices, applications and software to research, transmit and receive information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4003 Select, prepare and administer a construction contract

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in Element and Performance Criteria 3.3 corrected.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes but is not equivalent to CPCBC4003A Select and prepare a construction contract. Combines CPCBC4003A Select and prepare a construction contract and CPCBC4016A Administer a construction contract. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to select, prepare and administer contracts for commercial and residential construction projects. It includes contract selection, administration of a range of documents related to the contract and identifying causes of breach of contract.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions.

It applies to builders, estimators and project and site managers who interpret complex documents and communicate clearly and succinctly during contract negotiations.

This unit of competency is suitable for people operating with autonomy. A person working at this level would be expected to take responsibility for selecting and preparing construction contracts.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify and analyse business contracts.	<p>1.1 Recognise various types of building and construction contracts, their legal requirements and application.</p> <p>1.2 Analyse the importance of the intention to create legal relations.</p> <p>1.3 Read and interpret essential contract elements, terms, sections and clauses of a valid construction contract.</p> <p>1.4 Evaluate rights, obligations and liabilities of all parties.</p> <p>1.5 Identify and analyse circumstances that constitute a breach of contract.</p> <p>1.6 Identify factors involved in the termination of contracts.</p> <p>1.7 Identify legislative requirements and procedures.</p>
2 Select appropriate contract.	<p>2.1 Communicate clearly and directly with all parties to confirm the capacity to form a binding agreement.</p> <p>2.2 Prepare and compile the range of documents that collectively make up the contract.</p> <p>2.3 Establish factors and special conditions associated with the parties' consent to a contract.</p> <p>2.4 Recognise and apply the requirements associated with an offer and acceptance of a contract.</p> <p>2.5 Select a contract appropriate to the type of construction.</p>

- 3 Prepare the contract.
 - 3.1 Draft appropriate contract accurately incorporating all details, including definitions of unreasonable or vexatious notice, repudiation of a contract by either party, conditions for completion at the cost of the contractor, ousting the contractor from the building or construction site and abandonment of a contract.
 - 3.2 Assess and schedule progress payments, including processes for applying for extension of time.
 - 3.3 Ensure any discrepancies or disagreements are resolved prior to contract preparation.
 - 3.4 Ensure legality and validity of draft contract in consultation with relevant persons.
 - 3.5 Prepare final contract in accordance with the organisation's legal process.
- 4 Administer the contract.
 - 4.1 Process progress payments accurately as due under the contract.
 - 4.2 Process applications for extension of time in accordance with organisational policies and contract conditions.
 - 4.3 Identify, negotiate and document variations to contract.
 - 4.4 Act to minimise liquidated damages or penalties nominated in the contract.
 - 4.5 Administer contract and resolve contractual disputes in accordance with contract and relevant legislation and regulations.
 - 4.6 Assess conditions for issuing a final certificate.
- 5 Finalise a contract.
 - 5.1 Apply process for practical completion of contract.
 - 5.2 Finalise defects liability under a building or construction contract.
 - 5.3 Finalise contract in accordance with relevant legislation and contract provisions.
 - 5.4 Issue appropriate certificate upon completion of the

contract work.

- 5.5 Complete and secure documentation arising from finalisation of a contract for records purposes.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

- Supersedes and is not equivalent to CPCBC4003A Select and prepare a construction contract
- Supersedes and is not equivalent to CPCBC4016A Administer a construction contract.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4003 Select, prepare and administer a construction contract

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in Element and Performance Criteria 3.3 corrected.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes but is not equivalent to CPCBC4003A Select and prepare a construction contract. Combines CPCBC4003A Select and prepare a construction contract and CPCBC4016A Administer a construction contract. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by selecting, preparing and administering one contract for a construction project.

In doing this, the candidate must:

- select the correct contract by analysing identified legislative requirements and construction type
- prepare the construction contract specifying requirements for contract termination and special conditions agreed by all parties
- administer the contract following government legal and regulatory requirements and to the organisation's standards
- monitor price and time variations and negotiate with various parties to resolve contract anomalies
- collect all related construction contract and final inspection documentation and issue completion certificate.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian legal system and its relevance to contracts
- various types of housing and construction industry contracts and the circumstances they cover
- definitions and interpretations commonly applied to contracts
- Australian Standards

- *AS2124 General conditions of contract*, and
- *AS4000 General conditions of contract* series
- relationships between the organisation and its clients
- range of documents associated with a contract:
 - equipment, site accommodation and services information
 - human resource projections
 - materials lists
 - construction drawings and specifications
 - project timelines
 - schedules
- digital tools and devices to communicate and collaborate effectively with others
- range of digitally-based technology and applications to access, extract, integrate and compile information.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and construction and contract legislation
- current building and construction codes and standards
- relevant construction industry contracts
- construction drawings and specifications
- organisational policies and procedures and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to transmit and receive information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4004 Identify and produce estimated costs for building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4004A Identify and produce estimated costs for building and construction projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to establish estimated costs associated with the acquisition of materials and labour for building and construction projects. It includes factoring in relevant overhead costs and margins.

This unit of competency applies to estimators, builders, managers and trade contractors within the construction industry responsible for producing estimated costs on various residential and commercial construction projects within their scope of work as a trade contractor or builder.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Establish project requirements.	<p>1.1 Read and interpret construction drawings and specifications in conjunction with relevant building and construction regulations, codes and standards.</p> <p>1.2 Identify building site features, type of building and method of construction, and specified building materials.</p> <p>1.3 Establish site facilities, and communication and temporary boundary fencing requirements.</p> <p>1.4 Identify waste removal requirements and apply waste management site fees.</p> <p>1.5 Identify additional project-specific statutory, approvals or compliance costs.</p>
2 Calculate materials and labour costs.	<p>2.1 Produce a materials and consumables quantity list and obtain a price from supplier.</p> <p>2.2 Identify and estimate off-site production costs, including delivery.</p> <p>2.3 Identify numbers of contractors, sub-contractors and employees appropriate for the project and work rates.</p> <p>2.4 Estimate labour hours and calculate labour costs, including on-costs and worker insurance costs.</p>
3 Identify type and cost of physical resources.	<p>3.1 Identify physical resources required for the project.</p> <p>3.2 Determine limitations, conditions, operational costs and timeframes for hire of physical resources.</p> <p>3.3 Obtain supplier prices, including transport of physical resources.</p> <p>3.4 Identify, itemise and cost plant, equipment and machinery.</p>

- 4 Produce estimated project costs.
 - 4.1 Review and compile materials, consumables and off-site production costs and delivery charges.
 - 4.2 Compile labour costs inclusive of rates and entitlements.
 - 4.3 Compile costs of physical resources.
 - 4.4 Apply organisational overhead recovery and margins.
 - 4.5 Produce estimated project costs for inclusion in a tender or bill.
 - 4.6 Manage and mitigate risks associated with estimating project costs.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4004A Identify and produce estimated costs for building and construction projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4004 Identify and produce estimated costs for building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4004A Identify and produce estimated costs for building and construction projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by estimating the cost of one residential or commercial building and construction project.

In doing this, the candidate must:

- estimate project costing from construction drawings, specifications and written information
- list physical resources appropriate for the construction of the project
- produce project cost using an appropriate software program.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building and construction regulations
- building and construction standards and codes
- the National Construction Code (NCC)
- organisational policies and procedures
- organisational scope, processes and requirements for using employee and subcontractor labour
- Environmental Protection Authority (EPA) regulations
- construction drawings and specifications
- relevant physical resources and requirements for their operations:
 - earth moving and excavation equipment
 - hoists and lifting equipment
 - mobile cranes
 - compressors
 - generators
 - pumps

- calculating unit costs:
 - construction cost per square metre
 - laying of foundation per metre
 - laying of slabs per square metre
 - masonry walls per square metre
 - laying of steel tray roofing per square metre
 - installation of pipes per metre
 - installation of sanitary ware per unit
 - tiling per square metre
 - painting per square metre
- a range of digitally-based technology and applications to estimate quantities, calculate costs and maintain records
- workplace procedures, workplace safety and environmental requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current construction drawings and specifications
- building and construction standards and codes
- government building and construction regulations
- organisational policies and procedures and other quality documentation required to undertake the performance criteria and assessment requirements
- calculating technology, online applications and software to produce building and construction costs.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4005 Produce labour and material schedules for ordering

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4005A Produce labour and material schedules for ordering. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to produce schedules for physical and human resources and materials for residential or commercial projects. It includes monitoring project schedules and tracking and recording costs as they are incurred.

This unit of competency applies to site managers and forepersons, estimators, project managers and builders in the construction industry with responsibility for producing schedules for ordering materials and allocating labour.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Assess physical and human resource requirements. | 1.1 Check conditions of approval from local government and regulatory bodies and project commencement dates. |
| | 1.2 Identify variations to scope of works and contractual terms and arrangements by the client. |
| | 1.3 Compile a list of nominated and approved suppliers and contractors and develop channels for effective communication. |
| | 1.4 Confirm availability of materials with suppliers and labour with contractors. |
| | 1.5 Enter critical project information into project schedule. |
| 2 Produce schedules. | 2.1 Prepare electronic call forward sheet and site files containing necessary site documentation. |
| | 2.2 Break down project into stages and tasks and set milestones and timeframes for commencement and completion. |
| | 2.3 Itemise materials and labour required for the stages of construction. |
| | 2.4 Sequence material delivery dates and commencement times for labour. |
| | 2.5 Factor in unplanned delays. |
| 3 Monitor project costs and maintain project files. | 3.1 Monitor construction stage progression costs and approved variation costs against estimated project cost. |
| | 3.2 Manage and monitor project progress against scheduled timelines. |
| | 3.3 Record unscheduled and approved variations, changes to the approved plan and specifications and delays to the project. |
| | 3.4 Resolve issues, within scope of responsibilities, and |

maintain a cost analysis against final estimated project cost.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital devices to communicate and collaborate effectively with suppliers, contractors and others
 - use equipment and programs to prepare and access electronic call forward sheets and files.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4005A Produce labour and material schedules for ordering

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4005 Produce labour and material schedules for ordering

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4005A Produce labour and material schedules for ordering. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by producing a schedule for the ordering of materials and allocation of labour for a residential or commercial building and construction project.

In doing this, the candidate must:

- produce a labour and materials schedule across the life of the project
- develop and manage efficient communications between staff, contractors and suppliers
- monitor, maintain and record project progress and variations, estimated and increased costs and changes to construction drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building legislation and regulations
- building and construction codes and standards
- construction drawings and specifications
- building and construction contractor and supplier contracts
- local authority building application processes, approval and conditions
- organisational policies and procedures:
 - costing and ordering materials
 - selecting and engaging suppliers
 - approving and contacting contractors
- projects costs:
 - organisational and subcontractor labour
 - organisation overheads
 - public liability, professional indemnity and workers' compensation
 - temporary electrical, plumbing and draining services

- temporary site facilities, storage facilities and boundary fencing
- communications
- project administration
- workplace procedures, workplace safety and environmental requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current construction drawings and specifications
- relevant organisational policies and procedures
- various construction industry contracts
- organisational policies and procedures and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to set up electronic call forward sheets, compile site files and create channels of communication with internal and external stakeholders.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4006 Select, procure and store construction materials for building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4006B Select, procure and store construction materials for low rise projects. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to supervise the systems through which construction materials are typically selected, acquired and stored on site for residential and commercial building and construction projects. It includes knowledge of relevant building and construction materials and technologies, environmental effects on materials and identifying non-compliant materials to ensure the delivered construction materials meet National Construction Code (NCC) requirements and contract and service specifications.

It applies to NCC classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys and
- Commercial - Class 2 to 9, Type C only constructions.

It applies to builders, managers and industry professionals responsible for applying quality standards when procuring and supervising on-site storage of compliant construction materials.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|-----|---|
| 1 Identify and evaluate building materials. | 1.1 | Identify and read current and relevant project plans, specifications, codes and construction requirements. |
| | 1.2 | Identify properties of specified materials and assess their suitability for the building project in the region. |
| | 1.3 | Evaluate materials based on their quality, compatibility and compliance. |
| | 1.4 | Establish environmental impacts of materials. |
| | 1.5 | Determine impact of allowable tolerances on the conversion of naturally occurring materials. |
| | 1.6 | Establish material assembly and installation tolerances to meet requirements of relevant construction industry standards. |
| 2 Select and procure building material. | 2.1 | Select materials that are structurally adequate and appropriate for the building system specified in the contract. |
| | 2.2 | Select materials for their safety, fire resistance rating, suitability, durability, serviceability and cost effectiveness. |
| | 2.3 | Consider short and long-term degradation of materials in relation to the building's proposed life cycle. |
| | 2.4 | Evaluate and consider alternative materials if specified materials are unavailable or unsuitable. |
| | 2.5 | Finalise selection of materials for use in accordance with contractual requirements and in consultation with relevant professionals and the client. |
| | 2.6 | Procure and order materials following organisation's purchasing requirements. |

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| | 2.7 | Collect evidence of suitability from suppliers or manufacturers to ensure non-compliant materials are not used. |
| 3 | Supervise on-site delivery and storage of materials. | |
| | 3.1 | Determine limitations and effects of transportation on materials and components and take action to limit potentially damaging circumstances. |
| | 3.2 | Check delivered materials are compliant with specifications, are not damaged and correspond with delivery order. |
| | 3.3 | Allocate on-site storage space, supervise safe handling of materials and ensure the security and protection of materials to meet manufacturer specifications. |
| | 3.4 | Implement processes for inspecting all materials delivered on site for quantity, quality, defects, or damage and store safely. |
| | 3.5 | Inform relevant persons of actions relating to quality and inconsistencies of delivered building materials. |
| | 3.6 | Instruct relevant persons of established workplace safety requirements when accepting and storing delivered materials. |
| | 3.7 | Maintain records of deliveries, damaged and inferior materials and variations to specified materials. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation
- communication skills to:
 - use written and verbal communication with manufactures and suppliers, and other building professionals.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4006B Select, procure and store construction materials for low rise projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4006 Select, procure and store construction materials for building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4006B Select, procure and store construction materials for low rise projects. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by selecting, procuring and supervising the delivery and on-site storage of materials for one construction project for a residential or commercial building up to a maximum of two storeys.

In doing this, the candidate must:

- analyse reports, manufacturer specifications and other reference material regarding material technologies, sustainability and environmental efficiency
- test and measure products against relevant industry standards
- develop, supervise and maintain systems to select, acquire and store project materials on site
- seek expert advice from manufacturers, architects, designers and engineers about selecting and procuring alternative materials.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building and construction legislation
- relevant project plans, specifications, standards and codes
- the National Construction Code (NCC):
 - evidence of suitability relating to non-conforming building materials and products
- properties, applications and limitations of specified building materials, products and components:
 - cements
 - ceramics
 - concrete

- engineered timber products
- flooring
- framing
- glass
- mortars
- paints and coatings
- plasterboard
- plaster
- roofing
- structural steel
- environmental effects on materials, and preservation and protection methods:
 - timber
 - ferrous and non-ferrous metals
- alternative sustainable materials:
 - structural insulated panel systems
 - mud brick, straw bale and hemp
- construction supply processes and systems
- processes, procedures and techniques for:
 - identifying materials from plans and specifications
 - selecting and ordering compliant materials
 - external quality testing or inspection of materials to meet industry standards
 - referencing external reports and manufacturer specifications
 - seeking expert appraisal from architects, designers, engineers and relevant industry experts
 - refusing to accept non-compliant or substandard materials and taking appropriate action
- operational and functional features of materials handling equipment
- digital technology and applications to access, extract, integrate and compile information
- workplace safety:
 - relevant work health and safety (WHS) Act and regulations
 - hierarchy of control
 - hazardous manual tasks
 - mechanical material handling
 - licensing and competency for operating mechanical material handling equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current relevant government legislation
- the NCC and other relevant codes and standards
- construction drawings, site plans and specifications
- organisational policies, procedures and other quality documentation to undertake the performance criteria and evidence requirements
- manufacturer reports on materials
- digital devices, applications and software to research, transmit and receive information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4007 Plan building and construction work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4007A Plan building or construction work. Minor change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to plan on-site activities, employ human resources and obtain physical resources. It includes sequencing construction tasks, identifying appropriate skilled labour, physical resources and suppliers and assessing their availability, and developing documentation and advice for relevant authorities.

The unit of competency applies to those who decide on and arrange building and construction work for residential and commercial projects.

This unit of competency is suitable for builders, site managers, forepersons and other construction industry professionals using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------------------|--|
| 1 Identify operational requirements. | 1.1 Read contract documentation to identify any unusual aspects of construction, use of materials or penalties. |
| | 1.2 Determine availability of selected subcontractors to suit the job requirements. |
| | 1.3 Assess and confirm availability of materials with suppliers. |
| | 1.4 Identify site access requirements and limitations and organise site entry. |
| | 1.5 Determine project commencement date and prepare and submit documentation for authorities controlling construction work. |
| | 1.6 Implement procedures for accepting and recording site deliveries. |
| | 1.7 Identify and implement relevant work health and safety (WHS) requirements. |
| 2 Plan for construction operations. | 2.1 Identify organisational strategies for implementing construction operations. |
| | 2.2 Review procedures for recording the hire of plant and equipment. |
| | 2.3 Review procedures for the removal of existing services and hazardous materials in accordance with Environment Protection Authority (EPA) requirements. |
| 3 Prepare project schedule. | 3.1 Sequence construction operations. |
| | 3.2 Create project schedule using appropriate technology. |
| | 3.3 Define critical path of the project and revise during the life of the project. |

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| | 3.4 | Adjust project timeframes to account for anticipated delays. |
| 4 Determine required resources. | 4.1 | Determine and document temporary services and site accommodation requirements. |
| | 4.2 | Determine and document materials and plant requirements and availability dates according to contract documentation. |
| | 4.3 | Determine and document on-site labour requirements according to contract documentation. |
| 5 Prepare and submit condition reports. | 5.1 | Negotiate access to inspect condition of external structure and internal finishing of adjacent properties. |
| | 5.2 | Compile and complete reports on the condition of existing buildings and structures on adjacent site boundaries. |
| | 5.3 | Forward copies of condition reports to the owners of adjacent buildings prior to commencing construction. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant project schedules and documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4007A Plan building or construction work

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4007 Plan building and construction work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4007A Plan building or construction work. Minor change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by planning construction work for one building and construction project.

In doing this, the candidate must:

- develop a project schedule and associated documentation for:
 - delivery of materials and plant and equipment
 - commencement dates for on site contractors
 - milestones and deliverables
 - project critical path and timeframes
 - contingencies for breakdown of activities.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building and construction legislation, codes and standards
- types of building and construction industry contracts
- project plans and specifications
- sustainability and environmental requirements
- workplace safety:
 - work health and safety (WHS) Acts and regulations
 - hierarchy of control
- project management techniques
- organisation strategies and processes:

- briefing internal personnel, external agencies and clients
- calling for tenders for subcontractor operations
- appointing project managers and construction supervisors
- purchasing building supplies and construction materials
- refining project critical path information
- building and construction industry subcontractor system
- internal documentation systems:
 - applications for permits and service connections
 - environmental applications
 - parking restriction applications
- project schedule:
 - human resource schedule
 - material delivery schedule
 - project critical path
 - project timeframes
 - scheduling plant and equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current relevant government legislation
- current relevant building and construction codes and standards
- construction drawings, site plans and specifications
- organisational policies, procedures and other quality documentation to undertake the performance criteria and evidence requirements
- digital devices, applications and software to create project schedules and documentation.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4008 Supervise site communication and administration processes for building and construction projects

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Typographical error in Element 4 corrected.

Element 4.2 corrected from; Conduct onsite inspections for project monitoring according to schedule using relevant inspection checklists to:

4.2 Conduct onsite project monitoring and inspection of work quality

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4008B Conduct on-site supervision of building and construction projects. Title change for clarity purposes. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to supervise site communications, monitor and maintain compliance with codes and standards and implement project administration processes on a building and construction project.

It is strongly recommended that the site, as specified in the performance evidence, is 'live' (see Companion Volume for guidance).

This unit of competency specifies the skills and knowledge required to supervise the administration of quality control compliance and the use of site communications and record keeping systems; and conduct onsite inspections to complete the required project administration processes.

This unit applies to National Construction Code (NCC) classifications:

- Residential - Class 1 buildings to a maximum of two storeys
- Commercial - NCC Class 2 to 9, Type C only constructions.

This unit of competency is suitable for builders, site managers, forepersons and other construction industry professionals using specialised knowledge and skills to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program, specified in the model Code of Practice for Construction Work, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|-----|---|
| 1 Supervise the administration of quality control compliance. | 1.1 | Identify project quality control compliance requirements. |
| | 1.2 | Communicate organisational quality control processes and industry requirements to relevant personnel. |
| | 1.3 | Develop processes to ensure onsite work performance meets industry regulatory framework, jurisdictional requirements and quality control standards. |
| | 1.4 | Confirm that regulatory, jurisdictional and organisational compliance and quality control requirements have been met. |
| | 1.5 | Access or develop schedules and checklists detailing specific inspections to be conducted at appropriate stages of construction. |
| 2 Supervise the administration of projects. | 2.1 | Identify project administration requirements. |
| | 2.2 | Authorise payment of material and contractor invoices, drawing against contract allowances and back-charges, as required. |
| | 2.3 | Authorise variations to contracts and take corrective action as required. |
| | 2.4 | Process insurance claims for site loss or damage. |
| 3 Supervise the use of | 3.1 | Develop and implement systems for effective |

- | | | |
|---|-----|--|
| site communications and record keeping systems. | | communication between onsite and offsite staff, contractors and suppliers that systematically gather onsite information. |
| | 3.2 | Develop and implement construction project recording systems to capture relevant project details. |
| | 3.3 | Maintain a daily communications diary and key events. |
| | 3.4 | Record information relating to certifier inspections, union and legislative matters. |
| 4 | 4.1 | Conduct onsite project monitoring and inspection of work quality |
| | 4.2 | Apply workplace safety requirements and project administration procedures during onsite visit. |
| | 4.3 | Conduct onsite project monitoring and inspection of work quality. |
| | 4.4 | Inspect and record quality of work, notify relevant people of defects and issue rectification notice. |
| | 4.5 | Develop systems to monitor rectified work to ensure compliance with organisational quality control requirements, building standards and client satisfaction. |
| 5 | 5.1 | Complete project administration processes. |
| | 5.2 | Record work defects notified by external parties, establish liabilities and remedial action required, and develop inspection checklist. |
| | 5.3 | Notify client of rectification, and record client's response to completed work. |
| | 5.4 | Instigate procedures that will result in client approval and acceptance where this was not the client's initial response. |
| | 5.5 | Confirm contract requirements are fulfilled with relevant company personnel and client. |
| | 5.6 | Arrange for local authority completion inspection. |
| | 5.7 | Prepare certificates and appropriate client handover information, including all guarantees, warranties and termite protection forms. |

Foundation Skills

As well as the foundation skills candidates require:

- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation

Unit Mapping Information

Supersedes and is equivalent to CPCBC4008B Conduct on-site supervision of building and construction projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4008 Supervise site communication and administration processes for building and construction projects

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Typographical error in Element 4 corrected.

Element 4.2 corrected from; Conduct onsite inspections for project monitoring according to schedule using relevant inspection checklists to:

4.2 Conduct onsite project monitoring and inspection of work quality

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4008B Conduct on-site supervision of building and construction projects. Title change for clarity purposes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by:

1. Developing a plan to supervise the administration processes for one building and construction project which is either a:
 - Class 1 to a maximum of two storeys, or
 - Class 2 to 9, Type C building

In doing this, the candidate must:

- a. Create a plan to implement, administer, maintain and monitor site quality control.
 - b. Read and understand thoroughly the Site Safety Plan used on site.
 - c. Outline the communication systems that will be used on site.
 - d. Outline how systematic gathering of onsite information will be recorded.
 - e. Develop a progress inspection checklist for at least two trades for a section of building.
2. Conducting at least one site inspection to evaluate safety, project progress and work

quality for at least one section of a building. This worksite must be for a building and construction project which is either a:

- Class 1 to a maximum of two storeys, or
- Class 2 to 9, Type C building
 - a. The inspection checklist used
 - b. The rectification plan which outlines:
 - i. What must be rectified
 - ii. Why it must be rectified (with reference to appropriate standard, code or plan specification, etc)
 - iii. The recommended order in which rectifications should be done
 - iv. Expected duration of each rectification and when they are expected to be rectified by
 - v. Who will carry out the rectification and how they will be notified
 - vi. Will any rectifications affect the work remaining schedule, if yes - who did you notify.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building and construction industry contracts
- construction methodologies
- workplace procedures and work health and safety (WHS):
 - hierarchy of control
 - duty of care
 - risk assessment
- organisational quality management systems:
 - communicating with regulatory authorities
 - worker and contractor payment systems
 - issuing of completion certificates and appropriate documentation
 - finalising project contractual agreements
- onsite communication:
 - emails
 - face-to-face verbal communication
 - telephone contacts

- site diaries
- written reports and memoranda

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated workplace is one that fully replicates the resources, environment and any time and productivity pressures that exist in the actual workplace, and which meets industry standards for safety and environmental practices. The simulated workplace environment must be developed in consultation with industry stakeholders. (see Companion Volume for guidance).

Candidates must have access to:

- relevant jurisdictional safety legislation and regulations
- building and construction codes and standards
- relevant project plans and specifications
- organisational quality control documentation relevant to supervising the administration of quality control compliance, communications and recording systems, and work progress and quality
- business and safety equipment and materials to supervise administration processes for a building and construction project onsite.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4009 Apply legal requirements to building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4009B Apply legal requirements to building and construction projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply legal requirements to residential and commercial building and construction projects. It includes meeting licensing requirements, complying with financial and insurance laws and meeting the conditions of building contracts.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial --Class 2 to 9, Type C only constructions.

This unit of competency applies to builders, site managers, forepersons, estimators and other construction industry personnel responsible for applying legal requirements to residential or commercial building and construction projects.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems relating to legal requirements of building and construction projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify legislation relating to the construction project.	<p>1.1 Identify legal requirements from relevant government Acts and regulations appropriate to the type of building and construction project.</p> <p>1.2 Identify legal requirements for building contracts, construction insurance, industrial relations obligations and payroll systems.</p> <p>1.3 Determine class of building for the project and check for limitations of builder's registration and licence.</p> <p>1.4 Identify any construction activity restrictions, limitations and conditions from building approvals and permits for the project.</p> <p>1.5 Check licensing requirements or competencies for subcontractors, site supervisors and managers.</p> <p>1.6 Identify sustainability, environmental and waste management legislated requirements.</p> <p>1.7 Identify work health and safety (WHS) legislation and requirements of Construction work Code of Practice.</p>
2 Apply site safety requirements.	<p>2.1 Apply all the relevant requirements of WHS regulations that apply to the project.</p> <p>2.2 Adapt organisation's workplace procedures and workplace safety requirements to align with the project.</p> <p>2.3 Implement strategies to ensure all workers are inducted, informed and regularly updated of their on-site safety responsibilities.</p>
3 Apply legal	<p>3.1 Apply contract law in accordance with common law principles, relevant state or territory laws and</p>

- requirements. regulations, and fair trading legislation.
- 3.2 Apply the contract agreements and meet all the conditions during construction of the project.
 - 3.3 Confirm all mandatory building, subcontractor and worker's compensation insurances are current and applied to comply with legal requirements.
 - 3.4 Administer payroll system which incorporates employee and contractor payments, deduction of taxes, including goods and services tax (GST), tracking of transactions and calculating wages.
- 4 Apply industrial relations.
- 4.1 Apply workplace and subcontractor agreements and relevant awards to comply with industrial relations legislation.
 - 4.2 Identify and apply provisions for training agreements and make information available to all workers.
 - 4.3 Take proactive measures to ensure discrimination and harassment are not practiced in the workplace.
- 5 Resolve disputes and complaints.
- 5.1 Apply dispute resolution processes following organisational policies.
 - 5.2 Address complaints promptly, consult with complainant and resolve issue with the best solution for all.
 - 5.3 Record dispute outcome and maintain documentation.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4009B Apply legal requirements to building and construction projects

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4009 Apply legal requirements to building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4009B Apply legal requirements to building and construction projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying legal requirements to one residential or commercial building and construction project.

In doing this, the candidate must:

- identify and apply relevant legislative requirements applicable to the building and construction project
- apply legal obligations for:
 - insurance covering workers, materials and building
 - industrial relations, financial transactions, payment of wages and payment of subcontractor and supplier invoices
 - contractual agreements
- apply building and construction standards and codes during construction.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building and construction industry contracts
- builder registration and licensing
- Construction work Code of Practice
- appropriate government legislation:
 - business registration and licensing
 - industrial relations
 - work health and safety (WHS)
 - taxation and financial transactions
 - insurance
 - waste management and environmental protection

- organisational policies and procedures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and construction legislation
- current building and construction codes and standards
- relevant construction industry contracts
- organisational policies and procedures, insurance, industrial relations and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to obtain legal and building and construction information and record outcomes of disputes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4010 Apply structural principles to residential and commercial constructions

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to mapping.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes but is not equivalent to CPCBC4010B Apply structural principles to residential low rise constructions.
Combines CPCBC4010B Apply structural principles to residential low rise constructions and CPCBC4011B Apply structural principles to commercial low rise constructions.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply structural principles to the construction of residential or commercial structures. This unit includes applying structural principles to footing, floor, wall and roof systems.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions.

This unit of competency applies to builders, site managers, forepersons and other managers in the building and construction industry who apply structural principles to the demolition or construction of structures.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems relating to building application approvals.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

- CPCBC4053 Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings
- CPCBC4001 Apply building codes and standards to the construction process for Class 1 and 10 buildings

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Analyse the structural integrity of building project. | 1.1 Determine the class of building, intended use of building and climate zone from the NCC. |
| | 1.2 Analyse project for compliance with NCC bushfire, high wind, earthquake and alpine environment requirements. |
| | 1.3 Analyse building design and structural integrity from project plans and specifications, building standards and codes. |
| | 1.4 Determine the effect of section properties on various materials. |
| | 1.5 Determine if structural performance meets the General Requirements and Performance Requirements of NCC. |
| | 1.6 Confirm analysis with relevant industry professionals. |
| | 1.7 Conduct pre-commencement site inspection to confirm analysis. |
| | 1.8 Assess new and emerging building technologies for application to the construction process and their compliance with NCC requirements and relevant Australian Standards. |
| 2 Plan, coordinate and | 2.1 Identify earthworks and footing or slab configuration |

- | | |
|---|--|
| manage the laying of footings. | <p>from project plans and specifications.</p> <p>2.2 Establish cut and fill, excavation and compaction compliance with geotechnical report.</p> <p>2.3 Assess performance of reinforcement, concrete and other elements which contribute to structural integrity of specified footings.</p> <p>2.4 Determine compliance with building and construction regulations, standards and codes.</p> <p>2.5 Set out footings in accordance with project plans and specifications.</p> |
| 3 Plan, coordinate and manage laying of flooring systems. | <p>3.1 Identify flooring systems materials, components and configuration from project plans and specifications.</p> <p>3.2 Establish footing type and tie-down details.</p> <p>3.3 Assess suspended flooring system component sections' compliance with standards and codes' span requirements.</p> <p>3.4 Determine if floor framing and flooring is compliant with NCC Performance Requirements for climate zone, fire resistance and rising damp requirements.</p> <p>3.5 Supervise and check laying of specified floor system complies with project documentation.</p> |
| 4 Plan, coordinate and manage the building of wall systems. | <p>4.1 Identify and analyse structural and non-structural wall systems used in the planning of the building and construction project.</p> <p>4.2 Determine materials used for timber and steel framing and structural steel members meet the Performance Requirements of the NCC and timber framing complies with <i>AS 1684 Residential timber-framed construction</i>.</p> <p>4.3 Identify, implement and check processes for erecting structural and non-structural wall systems comply with manufacturer's specifications and building and construction standards and codes.</p> <p>4.4 Plan, implement and check requirements for application of bracing, tie-downs, tolerances, allowances, and fixing</p> |

- and installation of wall frame components for compliance with relevant Australian Standards, codes and manufacturer specifications.
- 4.5 Manage processes to ensure quality of the frame, whether factory pre-cut and pre-nailed, factory pre-cut and assembled on site, or cut and assembled on site.
 - 4.6 Identify and implement allowances for services to be installed.
 - 4.7 Check compliance of installation of windows and doors with building and construction standards and code and manufacturer’s specifications.
- 5 Plan, coordinate and manage the building of structural roof systems.
- 5.1 Identify type of structural roof system and components and determine compliance with Performance Requirements of NCC.
 - 5.2 Plan, implement and check erection of structural roof, roof trusses or hand cut roof members comply with building and construction standards and codes and accepted industry construction practices.
 - 5.3 Plan, implement and check installation of roof sarking and cladding, skylights, roof ventilators and service penetrations comply with building standards, codes and manufacturer specifications.
 - 5.4 Manage processes to ensure roof systems’ quality finish.
- 6 Plan, coordinate and manage wall cladding.
- 6.1 Assess structural performance of cladding to be used for bracing in the frame construction for compliance with building and construction standards, codes and manufacturer specifications.
 - 6.2 Determine cladding, vapour permeable sarking or waterproof membrane and components meet the Performance Requirements of NCC.
 - 6.3 Supervise and check installation of specified cladding complies with building and construction standards, codes and industry-accepted industry practices.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCBC4010B Apply structural principles to residential low rise constructions.

Supersedes and is not equivalent to CPCBC4011B Apply structural principles to commercial low rise constructions.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4010 Apply structural principles to residential and commercial constructions

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to mapping.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes but is not equivalent to CPCBC4010B Apply structural principles to residential low rise constructions.
Combines CPCBC4010B Apply structural principles to residential low rise constructions and CPCBC4011B Apply structural principles to commercial low rise constructions.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying structural principles to the construction of one building project.

In doing this, the candidate must:

- assess the structural integrity of the construction project
- apply technical construction principles and concepts to the appropriate selection, integration and building of construction elements and components
- coordinate, plan, implement and check the construction of the structure
- plan and document the structural principles of the construction of a building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building and construction legislation and regulations
- industry building and construction standards and codes
- the NCC
- classes of buildings described in the NCC
- standards and codes for timber framing
- structural principles:
 - behaviour of structural materials

- dead, live and wind loads
- performance of beams
- performance of columns
- performance of roof trusses
- section properties
- solution of force systems
- wind bracing
- project documentation:
 - approval project plans and specifications
 - structural designs and specifications
 - engineer's footing design and specifications
 - registered plans
 - contour site plan
 - geotechnical report
 - underpinning, rock anchors and shoring design and specifications
 - retaining wall and tanking design and specifications
 - structural, floor, wall and roof systems
- organisational quality documentation:
 - policies and procedures
 - workplace procedures, workplace safety and environmental requirements
 - various construction contracts
- footing systems:
 - bored pier footings
 - columns or stumps
 - concrete slab floors
 - reinforced piers and beams
 - drilled and driven piles
 - mass concrete piers
 - screw piles
 - waffle pod slabs
 - brick bases
- floor system and components:
 - suspended and slab on ground concrete floors
 - suspended timber, metal and steel floor frames
 - engineered floor joists
 - platform floor construction
 - fitted (cut-in) floors
 - compressed sheet wet area flooring
 - sheet flooring
 - tongue and groove flooring

- autoclaved aerated concrete (AAC) panel systems
- structural wall systems:
 - composite walls featuring tilt-up slab, engineered timber products and lightweight AAC
 - framed walls incorporating timber, engineered timber products and lightweight section steel
 - masonry walls incorporating cavity brick, single-leaf masonry and AAC
- wall cladding:
 - weather boards
 - coatings over base materials
 - corrugated metal sheeting
 - fibre cement and compressed wood panelling
 - tilt-up slab
 - unfired and fired AAC masonry
- structural roof systems:
 - timber and metal pre-fabricated trusses
 - hand cut timber
- roof types:
 - box gable
 - dual pitch
 - Dutch gable and Dutch hip
 - gable end
 - hip and valley
 - north light
 - skillion
 - rafter and purlin
- roof cladding:
 - concrete, clay and metal tiles
 - shakes and shingles
 - short and long run, various profile and metal sheeting
- AAC floor and wall systems
- causes and implications of structural defects related to failure of applying structural principles to residential and commercial buildings
- extent of remedial work required for various defects cause by inadequate design and application of structural principles.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and construction legislation
- current building and construction codes and standards
- the NCC
- material manufacturer's specifications
- construction drawings and specifications and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to obtain and research information electronically and exchange information with other stakeholders.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4012 Read and interpret plans and specifications

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4012B Read and interpret plans and specifications. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to read and interpret plans and specifications applicable to residential and commercial projects. It includes identifying site characteristics, features of the proposed building and details of the construction.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions.

The unit of competency applies to site managers, forepersons, estimators, builders, managers and other building and construction industry personnel who read and interpret plans and specifications for quantity surveying, costing and tendering and construction of building and construction projects.

This unit is suitable for people with specialised knowledge, completing routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify types of plans.	1.1 Confirm plans, specifications and amendments are the current version.
	1.2 Identify types of plans and aspects of the drawings specific for the intended purpose.
	1.3 Confirm details on plans comply with the specifications.
2 Read and interpret the plan.	2.1 Distinguish key features on the plans.
	2.2 Identify building location from site plan.
	2.3 Identify building layout, spaces and dimensions from floor plan.
	2.4 Examine detail drawings to determine sizes, thickness and methods of construction.
	2.5 Identify internal linings, external cladding and roof materials from plans and specifications.
3 Identify structural details.	3.1 Identify concrete footing and slab sizes and position and type of reinforcing.
	3.2 Identify load bearing points of the building.
	3.3 Identify wind bracing and tie-down requirements.
4 Identify non-structural details.	4.1 Identify provisional sum (PS) and prime cost (PC) items.
	4.2 Locate installation and connection points of services to the building.
	4.3 Identify location of fixtures from plans and details of finishes from specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4012B Read and interpret plans and specifications

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4012 Read and interpret plans and specifications

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4012B Read and interpret plans and specifications. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by identifying and interpreting building and construction information from a set of plans and specifications.

In doing this, the candidate must:

- identify orientation of structures, site contours, datum and reduced levels, and site features to be removed or retained
- identify structural load bearing information of the building and compare information from specification
- check wind bracing materials and tie-down methods for accuracy against the wind bracing table
- interpret essential elements from two-dimensional to three-dimensional format, and apply to estimation, planning and supervisory tasks.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types of plans:
 - concept drawing/sketches
 - architectural
 - structural
 - civil
 - mechanical
 - electrical
 - plumbing and draining
- parts of a plan:
 - site plan
 - floor plan

- elevations
- sections
- details
- drawing conventions:
 - datum and reduced levels (RL)
 - title block
 - scale
 - dimensions
 - abbreviations
- utilities and services plans and specifications
- isometric drawings, oblique drawings, perspective drawings and orthographic drawings
- computer-aided design (CAD) drawings
- building and construction regulations, standards and codes
- classes of buildings
- the NCC
- building information modelling (BIM)
- building and construction methods and terminology
- workplace processes, workplace safety and environmental requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- plans and specifications and other quality documentation required to undertake the performance criteria and assessment requirements
- relevant government building and construction and contract legislation
- current building and construction codes and standards
- National Construction Code
- computers, applications and software to access CAD.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4013 Prepare and evaluate tender documentation

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4013A Prepare and evaluate tender documentation. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to evaluate project and contract requirements and prepare and formalise tender documentation in the building and construction industry. It includes interpreting, compiling and documenting essential project information and demands into a final tender document.

It applies to builders, estimators and managers in the building and construction industry who have a responsibility for evaluating and preparing tenders for residential and commercial projects.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|--|-----|---|
| 1 Research project requirements. | 1.1 | Gather relevant information for tender preparation from current and approved project plans, specifications and project documentation. |
| | 1.2 | Select appropriate contracts and tender documents. |
| | 1.3 | Identify and record risks during evaluation of contracts and tender documents. |
| 2 Prepare tender documentation. | 2.1 | Collate all information for tender preparation and check for accuracy. |
| | 2.2 | Prepare tender documentation to correspond with selected contracts and organisational processes and procedures. |
| 3 Attach supporting documentation. | 3.1 | Select and accurately complete relevant documentation required to submit with the tender. |
| | 3.2 | Attach vital information, drawings, specifications or other supporting evidence to the tender document. |
| | 3.3 | Prepare and attach client acceptance forms and any amendments and conditions to the tender or contract. |
| 4 Obtain tender approval or endorsement. | 4.1 | Conduct final evaluation of completed tender documentation. |
| | 4.2 | Complete appropriate client contract for the project. |
| | 4.3 | Provide tender documentation to the appropriate staff member for approval or endorsement. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- reading skills to:
 - extract and comprehend relevant information from complex document text
- technology skills to:

- use tools and devices to communicate and collaborate effectively with others
- use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4013A Prepare and evaluate tender documentation

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4013 Prepare and evaluate tender documentation

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4013A Prepare and evaluate tender documentation. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by preparing tender documents for two contracts, with one being for a residential project and one for a commercial project.

In doing this, the candidate must:

- source and check relevant plans, specifications and tender documentation for currency and amendments
- evaluate risk associated with the tender process.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building and construction regulations, codes and standards
- structure and operations of the organisation's costing, tendering and contracting system
- tender documents and supporting documentation:
 - artist's impressions
 - building information modelling (BIM)
 - product information
 - promotional materials
 - reports and findings beneficial to the organisation
- project risks associated with tendering:
 - breach of contract
 - project delays
 - payment disputes
 - delays in progress payments
 - circumstances, such as:
 - delivery delays that extend project completion dates
 - labour shortages

- weather
- exposure through clauses that work against the organisation
- failure to adequately anticipate labour or materials costs
- inappropriate funding levels and funding shortfalls
- industrial disputes through misunderstandings or overt action
- risk of default or non-performance of key players
- types of building and construction drawings and specifications
- types, scope and usage of labour through the employee and subcontractor systems
- using appropriate costing software programs.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current relevant government legislation
- current relevant building and construction codes and standards
- construction contracts and associated tender documentation
- organisational policies, procedures and other quality documentation to undertake the performance criteria and evidence requirements
- business technology, applications and software to produce tender documentation.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4014 Prepare simple building sketches and drawings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4014A Prepare simple building sketches and drawings. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare sketches and drawings used for communicating ideas to clients and other parties. It includes capturing design concepts and options taken from architectural drawings to create simpler versions.

The unit of competency applies to builders, experienced tradespersons, project managers and estimators who prepare sketches and drawings for estimating, explaining details and showing measurements required for building and construction work.

It does not describe more complex drafting skills.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Prepare to make sketches and drawings.	1.1 Identify and select relevant information from construction plans required for sketching or drawing.
	1.2 Confirm construction plan information complies with building and construction regulations, standards and codes.
	1.3 Consider purpose and presentation of drawings and sketches and the intended audience.
	1.4 Determine format of information and select and inspect equipment for serviceability.
2 Create simple sketches and drawings.	2.1 Establish and record measurements, information and details required for drawing and sketches.
	2.2 Transfer vital information into two-dimensional and three-dimensional drawing and sketches.
	2.3 Create sketches and drawings using standard drawing conventions to detail vital information.
	2.4 Produce sectional drawings to clearly identify and label elements and components.
3 Notate and process drawings.	3.1 Apply essential information to the drawing using dimension lines, symbols and abbreviations following standard drawing conventions.
	3.2 Include drawing and job title, date, scale and sheet number in the title block.
	3.3 Produce completed drawings in an appropriate form for presentation.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4014A Prepare simple building sketches and drawings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4014 Prepare simple building sketches and drawings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4014A Prepare simple building sketches and drawings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by drawing two components of the fabric of the building from a set of construction plans and prepare drawings for presentation.

In doing this, the candidate must:

- select one structural and one non-structural component and collate vital information required for the drawing
- prepare simple sketches of the structural and non-structural components
- produce clear and descriptive drawings with appropriate notations and labelling.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- types of building and construction plans:
 - presentation drawings
 - isometric drawings
 - orthographic drawings
 - perspective drawings
- drawing conventions:
 - sheet layout
 - title block
 - line types
 - symbols
 - dimensions and dimension lines
 - abbreviations
- key features of a construction plan
- computer-aided design (CAD) drawings

- technical drawing by hand
- building and construction regulations, standards and codes
- the NCC
- building information modelling (BIM)
- building and construction methods and terminology
- workplace processes, workplace safety and environmental requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- construction plans and specifications
- current building and construction codes and standards
- the NCC
- hand drawing equipment
- workplace procedures and other quality documentation required to undertake the performance criteria and assessment requirements
- computers, applications and software to access drawings and other relevant information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4015 Prepare specifications for all construction works

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4015A Prepare specifications for all construction works. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare clearly understood specifications for construction works that may range from an outline to a more detailed specification. It includes establishing the level of detail required in inherent contractual obligations and developing the work specifications.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions.

This unit of competency applies to builders, site managers, estimators, forepersons and other construction industry personnel responsible for specifying materials, project timelines and quality of work for residential and commercial construction projects.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Determine specification requirements. | 1.1 Read and identify prescriptive and performance requirements from development approval, project brief, working drawings, codes and other relevant documents. |
| | 1.2 Determine suitability of information for adaptation into the current project. |
| | 1.3 Identify scope of works. |
| | 1.4 Ascertain contractual obligations and, where necessary, seek clarification and advice from specialists. |
| 2 Assess the nature and scope of the work. | 2.1 Conduct site inspection to establish and record site layout, details and features and preliminary site-work requirements. |
| | 2.2 Evaluate the relevant details and level of quality necessary to carry out the nature and scope of work. |
| | 2.3 Undertake research to establish appropriate schedules, using relevant data sources. |
| | 2.4 Tabulate and cross-reference details to ensure consistency between the design brief, working drawings and specifications. |
| | 2.5 Provide details in the specification that conform to industry codes of practice, Australian Standards and relevant statutory requirements. |
| 3 Prepare the specification document. | 3.1 Identify the contractual obligations and rights of the parties involved in the specification. |
| | 3.2 Collate and add relevant information requested from specialists, colleagues, suppliers, manufacturers and clients. |
| | 3.3 Complete specification document, check and edit thoroughly for compliance with requirements. |
| | 3.4 Present specification to the client in the required format |

and timeframe.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.
 -

Unit Mapping Information

Supersedes and is equivalent to CPCBC4015A Prepare specifications for all construction works

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4015 Prepare specifications for all construction works

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4015A Prepare specifications for all construction works. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by preparing a works specification for one building and construction project.

In doing this, the candidate must:

- arrange researched work specification information into easily understood formats
- draft the specification free of any ambiguities
- structure the specification document using correct terminology and link to other relevant construction documentation
- attach evidence of suitability, as stated in the National Construction Code (NCC), from supplier or manufacturer to repudiate non-conforming building products
- complete the specification to meet National Specification System of Australia (NATSPEC) and other relevant standards applicable to the building project.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- NATSPEC and other relevant industry standard specifications and codes
- building project scope of work:
 - standards of work
 - work schedules
 - milestones
- prescriptive requirements:
 - performance requirements
 - detail relating to materials and quality of work
 - nominated subcontractors
 - provision and costs of site access and facilities
- contractual obligations:
 - expected performance levels

- insurance requirements
- work health and safety (WHS) issues
- type of tender
- organisational quality assurance relating to works specifications
- relevant legislation:
 - contract law
 - consumer protection legislation
 - WHS
- requirements of evidence of suitability stated in the NCC
- documentation requirements arising from building information modelling (BIM).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government regulations, codes and standards
- current project plans, building specifications and manufacturer's product information
- organisational policies, procedures and other quality documentation to undertake the performance criteria and evidence requirements
- NATSPEC and other industry standard specifications
- digital devices, applications and software to prepare construction specifications.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4017 Arrange resources and prepare for the building and construction project

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4017A Arrange resources and prepare for the building or construction project. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to identify and procure the necessary on-site physical and human resources and systematically apply the supply process for a building and construction project. It includes notifying external agencies, employees and contractors and coordinating activities to meet scheduled timeframes.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions.

This unit of competency applies to builders, site managers and forepersons, estimators and other building and construction industry professionals who are responsible for pre-construction preparation of residential and commercial construction projects.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Complete preliminary construction requirements.	1.1	Source, read and interpret relevant project documentation.
	1.2	Set site handover date with client once appropriate fees are confirmed paid with relevant persons.
	1.3	Establish and provide insurance and security requirements.
	1.4	Notify authorities of the commencement of scheduled works.
	1.5	Determine and advise relevant persons of work, parking and other restrictions.
2 Organise on-site services and facilities.	2.1	Identify requirements for on-site facilities and services.
	2.2	Arrange, receive and position site office, storage sheds and on-site toilets and facilities.
	2.3	Identify and develop processes to protect or utilise existing services at the site.
	2.4	Arrange temporary power and water connections with service providers.
	2.5	Identify and meet council requirements for temporary site set-up.
3 Arrange public protection.	3.1	Follow work health and safety (WHS) and local authority authorisations for site setup.
	3.2	Erect compliant hoardings, fencing and signage.
	3.3	Arrange temporary site access and egress to meet local authority requirements.

- | | | |
|--------------------------------------|-----|--|
| | 3.4 | Organise waste facilities and waste removal. |
| 4 Organise on-site delivery. | 4.1 | Confirm and order materials to meet scheduled delivery dates. |
| | 4.2 | Check availability of physical resources and schedule delivery as needed. |
| | 4.3 | Receive, secure and protect materials and plant and equipment. |
| 5 Organise on- site human resources. | 5.1 | Address industrial relations and on-site safety matters that could impact on the preparation and human resourcing for building work. |
| | 5.2 | Identify and allocate on-site human resource requirements. |
| | 5.3 | Engage or appoint construction work supervisor. |
| | 5.4 | Engage appropriate employees or contractors as stated for project needs. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4017A Arrange resources and prepare for the building or construction project.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4017 Arrange resources and prepare for the building and construction project

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4017A Arrange resources and prepare for the building or construction project. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by identifying, planning and establishing the essential pre-construction infrastructure for a commercial or residential project.

In doing this, the candidate must:

- procure sufficient on-site facilities and materials to support the project requirements
- schedule temporary services and human resources
- sequence delivery of materials and equipment and allocation of human resources
- record and maintain information from local council, external authorities, employees and contractors.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- external service authorities, including:
 - electricity authorities
 - environmental protection agencies
 - local government agencies
 - road traffic authorities
 - water authorities
 - electronic communications
- relevant government building and construction regulations, codes and standards
- local council requirements:
 - consent matters
 - heritage protection
 - tree conservation

- environmental requirements
- organisational quality documentation:
 - resource procurement processes
 - policies and procedures
- workplace safety requirements
- relevant employee and contractor industrial relations and licensing requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and industrial relations legislation
- current relevant Building and Construction codes and standards
- current project plans, specifications and manufacturer's product information
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment and technology to facilitate arranging resources and preparing for a construction project.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4018 Apply site surveys and set-out procedures to building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4018A Apply site surveys and set-out procedures to building and construction projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to use technical instruments and levelling and surveying techniques to accurately set-out a building on site. It includes determining grid levels and developing contour plans.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions

This unit of competency applies to builders, site supervisors and related construction industry professionals responsible for ensuring accurate application of site surveys and set-out of a residential and/or commercial building.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Prepare for and conduct site set-out.	1.1 Source, read and follow current project plans and site set-out procedures.
	1.2 Select and use levelling devices in accordance with standard operating procedures (SOPs).
	1.3 Apply the 'two peg test' to check the amount of error present in the instrument.
	1.4 Carry out reduction in a closed level run by rise and fall method and by height of plane collimation (HPC) method.
	1.5 Calculate accurate staff readings to enable a specific reduced level (RL) set-out.
	1.6 Identify and explain errors in measured distances due to site characteristics and measurement methods.
2 Develop a contour grid.	2.1 Determine set-out grid and levels.
	2.2 Prepare contour plans from grid levels to specified tolerances and stated contour intervals.
	2.3 Determine surface area being levelled and calculate cut and fill volumes.
	2.4 Calculate and record trigonometric and geometric calculations commonly used with grid lines, off sets and right-angle triangles without error.
3 Determine grades and levels.	3.1 Draw longitudinal sections from RLs.
	3.2 Determine levels and clearances from given grades and distances to specified tolerances.
	3.3 Express calculation angles, percentages and run ratios in grades.

- 3.4 Determine calculations for batter levels from grades and distances.
- 3.5 Construct longitudinal sections and determine associated grades and levels in typical drainage and pipeline situations.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require

- numeracy skills to:
 - extract, interpret and comprehend measurements and information from site and set-out plans
 - perform trigonometric and geometric calculations
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4018A Apply site surveys and set-out procedures to building and construction projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4018 Apply site surveys and set-out procedures to building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4018A Apply site surveys and set-out procedures to building and construction projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by surveying and setting out a residential or commercial building on site.

In doing this, the candidate must:

- select and operate one surveying and one levelling device
- develop a topographic contour plan
- calculate cut and fill quantities:
 - area and volume of land to be levelled
 - area of land to be filled
 - volume of fill required.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- working drawings, specifications and design principles
- relevant building codes and specifications
- linear and angular measurements, geometry and trigonometry
- principles of surveying and set-out
- operational and functional features of levelling and surveying devices:
 - electronic distance measuring (EDM) equipment
 - laser
 - optical level
 - water level
 - theodolite.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current project and site plans and specifications
- organisational surveying, set-out and associated documents
- relevant computer software packages and technology applicable to survey and set-out practices
- levelling devices and survey equipment to enable site survey and set-out for a building and construction project.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4019 Apply sustainable building design principles to water management systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4019A Apply sustainable building design principles to water management systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply sound water management principles as part of the implementation of sustainable building and construction processes.

It covers legislative and planning requirements, identifying and applying opportunities for improved water management, and promoting best practice in water management to meet the demand for sustainable buildings and environmentally friendly developments.

This unit of competency applies to builders, site supervisors and related construction industry professionals who apply sustainable water management systems to residential or commercial building.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C constructions.

This unit of competency is suitable for people with specialised knowledge, completing routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Identify legislative and planning requirements. | 1.1 Identify government legislation and local council requirements for sustainable water systems as part of the building and construction design process. |
| | 1.2 Confirm design and use of water management systems requirements with client. |
| | 1.3 Seek expert plumbing advice as part of the planning process. |
| | 1.4 Consult the National Construction Code (NCC), Australian Standards and other codes and standards to identify the implications for the building project. |
| | 1.5 Identify and address environmental and resource efficiency issues. |
| 2 Identify and apply opportunities for improved water management. | 2.1 Identify and appraise the impact of client and resident behaviour on effective water management and use. |
| | 2.2 Identify, evaluate and apply opportunities to select efficient water management fixtures and appliances as part of the building design. |
| | 2.3 Calculate and communicate installation and ongoing usage costs of efficient water management fixtures and appliances to the client. |
| | 2.4 Select efficient water management fixtures and appliances as negotiated. |
| 3 Apply sound water management principles to the site and its | 3.1 Contain soil and sediment as part of site preparation and management. |
| | 3.2 Apply sound waste management practices on site. |

- landscaping.
 - 3.3 Put in place and use effective sediment control barriers.
 - 3.4 Stockpile and retain topsoil and local rocks for later reuse.
 - 3.5 Optimise reuse and recycling of water in the landscape design.
- 4 Promote best practice in water management.
 - 4.1 Select, locate and install tanks to optimise the reuse of roof water.
 - 4.2 Identify costs for construction of reuse of grey water facilities and negotiate with the client.
 - 4.3 Identify costs and performance characteristics of various materials used in the installation of water management systems and negotiate selection of materials with client.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4019A Apply sustainable building design principles to water management systems

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4019 Apply sustainable building design principles to water management systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4019A Apply sustainable building design principles to water management systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying sustainable building design principles to the water management system of one Class 1 or 10 building, up to two storey or one Class 2 to 9, Type C building project.

In doing this, the candidate must:

- source and analyse legislative and planning requirements for water management design
- apply the principles of effective water use, recycling and reusing in the planning process
- calculate costs and savings of implementing an alternative water management system
- produce work plans that reflect effective water management.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- building and construction codes and standards
- the National Construction Code (NCC)
- government building and construction legislation
- environmental requirements
- sustainability principles and concepts
- building and construction industry contracts
- construction plans and specifications
- water management systems:
 - grey water recycling
 - roof water reuse
- fixtures and appliances:
 - dishwashers
 - showerheads (low flow and maxi flow)
 - spas

- taps
- toilets
- washing machines
- waste management practices:
 - run-off from the cleaning up of equipment:
 - painting
 - concreting
 - plastering
 - brickwork
 - on-site waste management
- workplace safety requirements
- workplace procedures.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- relevant government building and construction regulations
- current building and construction codes and standards
- the NCC
- construction plans, site plans and specifications
- policies and procedures
- environmental, sustainability and other quality documentation to undertake the performance criteria and evidence requirements
- digital technology devices, applications and software to source and document information.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4020 Build thermally efficient and sustainable structures

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Element 1.2 changed to allow for continuing compliance with NCC.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4020A Build thermally efficient and sustainable structures. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply sound principles of thermal efficiency as part of the implementation of sustainable building and construction processes in response to the need to respond to growing consumer demand for sustainable buildings and environmentally friendly developments.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions.

This unit of competency supports the needs of builders, site managers and forepersons, and estimators in the building and construction industry.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Apply legislative and planning requirements for thermal efficiency to the building process.	1.1 Identify current relevant state, territory and council requirements for building thermally efficient structures. 1.2 Identify factors that contribute to the construction of a star rated dwelling identified within the NCC and assess the impact of regional climate differences. 1.3 Identify and negotiate client needs and expectations for the design and construction of thermally efficient structures. 1.4 Gather expert design and other advice as part of the planning and construction process. 1.5 Consult relevant Australian Standards to identify the implications for the conduct of the building project.
2 Review design solutions for effectiveness and compliance.	2.1 Identify impact of radiation, convection, conduction and evaporation on the thermal comfort of residents. 2.2 Evaluate orientation of the building, location and size of glazing, and use of thermal mass as design features for effectiveness and compliance with planning and other regulatory requirements. 2.3 Evaluate, cost and communicate effective strategies for insulating the structure to the client. 2.4 Assess building designs for their compliance with the energy efficiency requirements of the NCC. 2.5 Consult designers and clients to ensure final construction plans are effective, efficient and compliant.
3 Manage the building process to ensure an effective outcome.	3.1 Establish effective communications between designers, architects and clients to ensure effective thermal performance is embedded from the design to construction phase. 3.2 Confirm effective quality assurance processes are in place to evaluate and implement the building of a

five-star dwelling.

- 3.3 Assess and communicate to client, cost-effective strategies to achieve desired level of thermal performance.
- 3.4 Assess and negotiate life cycle costs of various construction approaches with the client.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4020A Build thermally efficient and sustainable structures

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4020 Build thermally efficient and sustainable structures

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Element 1.2 changed to allow for continuing compliance with NCC.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4020A Build thermally efficient and sustainable structures. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by effectively applying mechanical services principles and concepts to the construction of a thermally efficient and sustainable building structure.

In doing this, the candidate must:

- sourcing and analysing legislative and planning requirements for thermal efficiency in the building process
- calculating costs and savings of implementing alternative thermally efficient systems
- applying principles of thermal efficiency to planning of a building project
- producing work plans that reflect effective thermal efficiency.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building and construction industry processes for building sustainability
- requirements for building thermally efficient structures:
 - appropriate use of thermal mass (noting impact of climatic conditions)
 - glazing size and orientation
 - insulation
 - orientation of building
 - use of relevant construction methods
- regional climate differences areas:
 - cooling climates

- hot arid climates
- hot humid climates
- mixed climates
- relevant state or territory building and construction codes, standards and government regulations
- underlying mathematics related to the calculation of thermal efficiency
- workplace safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- relevant government building and construction regulations
- current building and construction codes and standards
- the NCC
- construction plans, site plans and specifications
- policies and procedures
- environmental, sustainability and other quality documentation to undertake the performance criteria and evidence requirements
- digital technology devices, applications and software to source and document information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBC4021 Minimise waste on the building and construction site

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCBC4021A Minimise waste on the building and construction site. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to support sustainable building practices by minimising waste removed from residential or commercial building and construction sites. It includes planning a waste minimisation strategy, calculating cost benefits and implementing alternative waste minimisation systems.

This unit of competency applies to builders, site managers and forepersons, and estimators in the building and construction industry responsible for managing compliance with waste regulations and minimising waste on construction sites.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan a waste management strategy.	1.1 Identify current government and council environmental requirements for managing and minimising building waste.
	1.2 Research environmental guidelines and standards and develop an alternative waste management strategy to support the building and construction project.
	1.3 Calculate costs, potential savings and advantages of a waste management strategy and negotiate with client.
	1.4 Establish effective communication with the architect, designer, engineer and other relevant professionals to ensure project plans incorporate waste minimisation strategies.
2 Manage materials procurement to minimise waste.	2.1 Evaluate building and construction materials to identify high quality and more durable materials that will extend the life of the structure and simplify its future extension and refurbishment.
	2.2 Use recycled materials where appropriate that meet regulatory and standards' restrictions.
	2.3 Develop procurement specifications that seek to minimise packaging waste.
3 Manage the building process to reduce waste.	3.1 Determine and use demolition practices to increase the recovery of materials for recycling and reuse.
	3.2 Adopt strategies to minimise the volume of site excavation and other materials that are disposed of in landfill.
	3.3 Adopt litter abatement strategies on site.
	3.4 Plan and implement safe and environmentally effective disposal of unavoidable waste.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4021A Minimise waste on the building and construction site.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4021 Minimise waste on the building and construction site

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4021A Minimise waste on the building and construction site. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing and implementing an alternative sustainable waste management strategy to minimise building and construction waste for one residential and one commercial building and construction site.

In doing this, the candidate must:

- include the principles of sustainable waste management appropriate to each project
- develop the waste management strategies to comply with environmental and sustainability regulations and guidelines.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building and construction methods and principles
- government building and construction regulations
- building and construction standards and codes
- the National Construction Code (NCC)
- environmental and sustainability regulations
- minimising adverse environmental impacts and promoting sustainability by:
 - effective, efficient and economical procurement of materials and products
 - assessment of whole of life cycle of materials and products
 - engaging with environmentally responsible suppliers
 - managing resource demand and consumption
 - managing environmental risk
 - recycling, reclaiming and reusing materials
 - onsite litter abatement
 - packaging waste reduction

- workplace procedures and workplace safety requirements
- digital tools and devices to communicate and collaborate effectively with others
- a range of digitally-based technology and applications to research environmental guidelines and standards and compile information electronically.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government and council building and construction environmental and sustainability requirements
- current building and construction codes and standards
- construction drawings and specifications and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to access, extract and manipulate relevant information electronically to use and share with others.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4022 Supervise tilt-up work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Weight corrected in Performance Evidence. Formatting corrected in the Knowledge Evidence.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4022A Supervise tilt-up work. *Prior to final endorsement of this unit of competency, the Construction IRC changed the weight in the Performance Evidence of the in-situ tilt slab from at least 10 tonnes to at least 6 tonnes. This change occurred to provide more flexible assessment conditions to suit industry.*

Application

This unit of competency specifies the skills and knowledge required to organise, coordinate and supervise tilt-up work on a construction site. It includes the application of safe work practices during the erection and temporary bracing of tilt-up pre-cast concrete panels.

This unit of competency applies to site supervisors and builders who have a sound understanding of licensing and competency requirements for crane operation, dogging and rigging and are responsible for planning, organising and supervising tilt-up work on a construction site.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Provide effective administration.	<p>1.1 Read and interpret relevant project plans, details and specifications for tilt-up work.</p> <p>1.2 Store all structural and design documents, pre-cast panel shop drawings, layout plans and other required documents on site.</p> <p>1.3 Check licence and competency details of persons assigned to perform tilt-up work and ensure regulatory training requirements have been met.</p> <p>1.4 Check mandatory licences and approvals required for tilt-up work are obtained.</p> <p>1.5 Notify relevant regulatory authorities of work commencement and ensure the administration process is complete.</p>
2 Plan work and set up site.	<p>2.1 Prepare and implement a site-specific work health and safety (WHS) management plan and work plan and apply WHS risk control measures.</p> <p>2.2 Provide site security, amenities, services and emergency/first aid facilities and prepare site procedures.</p> <p>2.3 Develop traffic management and public safety plans and procedures and plan exclusion zones for concrete panel delivery, casting and erection operations.</p> <p>2.4 Review and provide requirements for footings, structural elements, concrete slabs and site access roads for the tilt-up work.</p> <p>2.5 Determine suitable onsite crane operating positions in consultation with crane suppliers and operators.</p> <p>2.6 Identify ground conditions such as soak wells and drains likely to affect crane stability and check crane standing areas for strength and compaction.</p>
3 Supervise and	<p>3.1 Check concrete panel inspection records to confirm</p>

- coordinate tilt-up work.
- design specifications have been followed during panel fabrication and manufacture.
- 3.2 Coordinate delivery sequence for concrete panels cast off site or coordinate a casting and curing schedule and distribution of panels on site.
- 3.3 Supervise placement and storage of concrete panels onsite and ensure it meets engineer's requirements.
- 3.4 Put in place processes to ensure erection areas are cleared, exclusion zones set up, barriers erected, and site personnel advised of restricted access areas prior to erection of concrete panels.
- 3.5 Check fixings and anchor bolts supplied for temporary bracing are compliant with designer and engineer specifications.
- 3.6 Check correct type of braces, locating dowels and shims are correctly placed and components positioned and propped in accordance with shop drawings or as approved by the engineer.
- 3.7 Supervise workers and contractors during the erection of the concrete panels and ensure that safe systems of work and safe work practices are enforced and followed.
- 3.8 Use job safety and environmental analysis (JSEA) and other tools to identify hazards, assess risks and create safe systems in the event of unanticipated circumstances.
- 4 Confirm tilt-up stabilisation.
- 4.1 Check erected concrete panels for compliance with design and engineering specifications.
- 4.2 Check compliance of structural steel elements being fixed to the temporarily braced panels are in accordance with designed engineering specifications.
- 4.3 Inspect integrity of erected structure prior to removal of temporary bracing to ensure it meets engineer certification.
- 4.4 Supervise the sequential removal of temporary bracing.
- 4.5 Oversee the safe removal of temporary bracing, plant and equipment from site.

- 4.6 Supervise the completion of the erection work and clearing and cleaning of work areas prior to other trades being permitted to enter work zones.
- 4.7 Notify relevant personnel of work completion and maintain site records to company requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4022A Supervise tilt-up work. Prior to final endorsement of this unit of competency, the Construction IRC changed the weight in the Performance Evidence of the in-situ tilt slab from at least 10 tonnes to at least 6 tonnes. This change occurred to provide more flexible assessment conditions to suit industry.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4022 Supervise tilt-up work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Weight corrected in Performance Evidence. Formatting corrected in the Knowledge Evidence.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4022A Supervise tilt-up work. *Prior to final endorsement of this unit of competency, the Construction IRC changed the weight in the Performance Evidence of the in-situ tilt slab from at least 10 tonnes to at least 6 tonnes. This change occurred to provide more flexible assessment conditions to suit industry.*

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by demonstrating the supervision on at least one occasion of the erection of:

- one multi-point pre-cast tilt slab or one cast in-situ tilt slab each of at least 6 tonnes.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building and construction legislation, standards and codes
- National Standard for Construction Work and the Code of Practice for Construction Work
- relevant tilt-up construction codes and standards including current versions of AS3850.1:2015 Prefabricated concrete elements Part 1: General requirements and National Code of Practice for Precast Tilt-Up and Concrete Elements in Building Construction
- project plans, drawings and specifications for tilt-up work
- processes, procedures and techniques for:
 - lifting and placing tilt-up panels
 - securing panels to base
 - levelling and plumbing panels
 - temporary bracing panels
 - grouting, bracing, torquing, stabilisation and fixing of panels

- competency and licensing requirements to operate plant and equipment and carry out tilt-up panel work
- capacity and limitations of plant, lifting gear and equipment used in tilt-up work
- capacity and limitations of rigging and equipment
- workplace safety:
 - hierarchy of control
 - hazard identification
 - emergency first aid
 - emergency shutdown and stopping
 - working at heights
 - fall arrest equipment
 - scaffolding
 - access equipment
 - electrical hazards
 - overhead hazards
 - confined spaces.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and construction legislation
- current relevant building and construction industry codes and standards
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- project plans and specifications
- plant, equipment and qualified personnel necessary to supervise tilt-up work.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4024 Resolve business disputes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4024A Resolve business disputes.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to advise on or resolve business disputes that may arise during activities in residential and commercial contracting projects. It includes the development and implementation of dispute resolution processes and procedures.

This unit of competency applies to builders, site supervisors and related construction industry professionals responsible for resolving business disputes in a positive manner.

This unit of competency is suitable for people with specialised knowledge, completing routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Evaluate dispute information.
 - 1.1 Review and evaluate information to identify the dispute issue, potential causes, circumstances and persons involved.
 - 1.2 Analyse and appraise contractual arrangements and agreements and relevant legislation.
 - 1.3 Identify risks and prepare contingency strategies.
 - 1.4 Obtain advice from senior managers and other professionals to develop a dispute resolution strategy.
 - 1.5 Follow dispute resolution procedure.
 - 1.6 Secure agreement for procedure from all parties.
- 2 Negotiate with parties.
 - 2.1 Interview concerned parties individually to clarify reasons for dispute, issues and desired outcome.
 - 2.2 Conduct an inspection of work in dispute, as required, to determine compliance with the requirements.
 - 2.3 Develop solutions based on interview with parties, inspection of work and compliance with requirements to optimise likelihood of a favourable outcome.
 - 2.4 Offer parties recommended solutions to resolve dispute equitably and advise parties of legal processes should resolution not occur.
 - 2.5 Record and maintain dispute process, information and outcome.
- 3 Identify opportunities for dispute resolution.
 - 3.1 Identify and detail process to consult with external arbitrators or conciliators when disputes cannot be resolved internally.
 - 3.2 Implement procedures to settle dispute promptly following statutory law, professional and organisational requirements.
 - 3.3 Communicate with relevant parties to ensure client satisfaction or follow up actions.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- speaking and listening skills to:
 - actively listen and use observational and questioning techniques to identify different perspectives and confirm, clarify and revise understanding.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4024A Resolve business disputes

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4024 Resolve business disputes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4024A Resolve business disputes.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria of this unit by resolving one construction project dispute.

In doing this, the candidate must:

- identify the nature of the dispute and identify the parties in the dispute
- document dispute details accurately and in sufficient terms to eliminate any ambiguity
- follow established dispute resolution procedures and develop and implement dispute resolution procedures where none are established
- maintain impartiality throughout the dispute resolution process.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- contractual and business frameworks underpinning the building and construction industry
- legislation and other guidelines:
 - common law
 - consumer law
 - contract law
 - government dispute resolution guidelines
 - privacy
- dispute resolution and conflict theory
- risk assessment and evaluation strategies
- negotiating processes and strategies
- industry dispute resolution guidelines
- organisational policies and procedures
- values and attitudes of various groups in the community that should be accounted for in discussions
- possible reactions and behaviours from persons in a dispute situation

- dispute resolution procedures:
 - mutual resolution
 - on-site negotiations
 - reference to contractual obligations
 - arbitrated decisions
 - common law outcomes
 - litigated decisions
- causes of business disputes:
 - contract payment issues
 - different opinions about design, structural layout or dimensions
 - dissatisfaction with project progress
 - structural finish, quality, materials or construction methodology
- digital tools and devices to communicate and collaborate effectively with others
- a range of digitally-based technology and applications to access, extract integrate and compile information.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current building and construction codes and standards
- contracts, construction drawings and specifications
- relevant government legislation and other quality documentation to undertake the performance criteria and assessment requirements
- digital devices, applications and software to receive, record and save dispute information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4026 Arrange building applications and approvals

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4026A Arrange building applications and approvals. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare and submit building applications to appropriate authorities for approval and manage the submission through to its final approval. It includes communicating effectively with clients, building professionals and planning officers.

The unit of competency applies to builders, project managers and related construction industry professionals responsible for coordinating and managing the building approval process for residential and/or commercial projects.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems relating to building application approvals.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan the application process.	<ul style="list-style-type: none">1.1 Identify project stages requiring approvals and develop a submission plan.1.2 Determine level and type of information and documentation needed for each stage of approval.1.3 Consult with external specialists to facilitate document certification.1.4 Review submission plan to ensure client needs are addressed and met.
2 Prepare and lodge application.	<ul style="list-style-type: none">2.1 Prepare documentation and supporting information for compliance with the requirements of the building approval authority.2.2 Adopt strategies to minimise impact on stakeholders and maintain their support for the application.2.3 Lodge application and supporting documentation with approval authority.2.4 Notify relevant person for payment of fees within the due dates and terms.
3 Manage application process.	<ul style="list-style-type: none">3.1 Seek confirmation of application status at appropriate intervals to ensure continuing progress.3.2 Assess building approval progress and inform stakeholders.3.3 Evaluate minor amendments to determine impact on project.3.4 Analyse course of action to maintain project continuity pending rejected submissions, resubmissions or appeals.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - liaise with clients, stakeholders, specialists and approval authorities to negotiate amendments, confirm requirements and share information
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.
 -

Unit Mapping Information

Supersedes and is equivalent to CPCBC4026A Arrange building applications and approvals

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4026 Arrange building applications and approvals

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4026A Arrange building applications and approvals. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by preparing, submitting and managing one residential and one commercial building and construction application for approval.

In doing this, the candidate must:

- develop a submission plan, which includes:
 - stages and dates for submission of applications
 - forms, documents and supporting evidence required to be submitted
 - application fees, charges and costs.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building legislation, codes and standards
- plans, specifications and contracts
- local authority building application processes:
 - full approval
 - staged approval
 - development applications
 - sustainability requirements
 - fees and levies
 - complaints and appeals
- documentation requirements of building approval submissions:
 - design briefs
 - specialist's reports
 - working drawings, plans, details and specifications
- organisational quality assurance processes and practices:

- authorities and approval delegations
- document control
- specialist services for certification of documentation:
 - building surveyors, quantity surveyors and site surveyors
 - geotechnical and environmental specialists
 - structural, mechanical and electrical engineers.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- relevant government regulations, codes and standards
- current project plans, specifications and manufacturer's product information
- organisational quality assurance documents
- local authority building approval processes and application forms
- sufficient materials and equipment to facilitate arrange building applications and approvals.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4027 Establish a basis for sales consulting

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4027B Establish a base for sales consulting. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to establish a basis for sales consulting. It includes managing self-development to improve personal performance.

It applies to sales consultants and other professionals who are responsible for the marketing and sale of newly constructed residential and commercial structures.

This unit of competency is suitable for people operating with autonomy. A person working at this level would be expected to take responsibility for establishing a basis for sales consulting.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---------------------------------------|-----|---|
| 1 | Develop and apply industry knowledge. | 1.1 | Obtain, read and interpret organisational policies and procedures relating to sales consulting. |
| | | 1.2 | Develop knowledge of organisation's products and services. |
| | | 1.3 | Research and identify market segments within the |

- industry sector.
- 1.4 Provide customers with accurate and clear industry information.
- 2 Apply key attributes of an industry sales consultant.
- 2.1 Use appropriate body language, gestures, facial expressions and tone of voice to support the sales process.
- 2.2 Determine customer type and needs by using open-ended questions and active listening.
- 2.3 Apply persuasive communication techniques to secure buyer interest.
- 2.4 Communicate other unique features to enhance buyer retention.
- 2.5 Obtain and present proof of benefits through the product purchase process.
- 2.6 Utilise sales aids to build buyer understanding of how the product is aligned with their needs.
- 3 Manage buyer resistance and complete documentation.
- 3.1 Determine customer interest from behaviour and cues.
- 3.2 Identify source of buyer resistance by using probing techniques.
- 3.3 Identify buyer strengths and limitations and formulate a strategy to overcome resistance.
- 3.4 Record customer sales information.
- 4 Manage self-evaluation and personal performance.
- 4.1 Identify self-development improvements and produce a plan that reflects individual and company goals and targets.
- 4.2 Review, evaluate and modify personal performance.
- 4.3 Establish processes to maintain personal mental and physical wellbeing.

- | | | | |
|---|---|-----|---|
| 5 | Develop and maintain personal competence. | 5.1 | Identify and attend ongoing training and professional development programs that support competence. |
| | | 5.2 | Participate in professional networks and associations to enhance knowledge, skills and relationships. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4027B Establish a base for sales consulting.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4027 Establish a basis for sales consulting

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4027B Establish a base for sales consulting. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by consulting a minimum of three customers.

In doing this the, the candidate must:

- explain sectors of the construction industry and range of products available in each sector
- convey information factually and accurately without overpowering the client
- adhere to organisational ethical and probity standards
- use technology skills and equipment to aid presentation
- manage and resolve customer dissatisfaction.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government legislation affecting business operations:
 - standards and codes of practice
 - anti-discrimination
 - consumer protection
 - contract law
 - ethical principles
 - privacy laws
 - Competition and Consumer Act
- government building and construction regulations, standards and codes
- legal and contractual requirements relating to building and construction
- types and classes of building as classified in the National Construction Code (NCC)
- market segments:
 - first and subsequent home buyers
 - speculative and investor buyers

- sources of buyer resistance and dissatisfaction and strategies to overcome and resolve them
- characteristics of the marketplace which influence an individual's decision to invest in a building
- methods to improve personal performance and self and professional development
- digital tools and devices to communicate and collaborate effectively with others
- a range of digitally-based technology and applications to access, extract integrate and compile information.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government sale legislation
- current building and construction codes and standards
- construction drawings and specifications
- organisational policies and procedures and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to transmit and receive information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4028 Prepare design brief for construction works

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4028A Prepare design brief for construction works. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare a construction design brief for a client. It includes negotiating with the client, seeking feedback on the design and preparing a final design brief for client approval.

This unit of competency applies to builders, site managers, estimators, forepersons and other construction industry personnel who prepare residential and commercial project design briefs from client requests.

This unit of competency is suitable for those using specialised technical and creative skills to express ideas and perspectives and use their own judgement to deal with predictable and sometimes unpredictable problems relating to preparation of design briefs.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Gather client requirements.
 - 1.1 Discuss project requirements with client and design team.
 - 1.2 Confirm financial expectations of the client.
 - 1.3 Discuss preliminary design notions with team members to ensure consistency with client's vision.
 - 1.4 Prepare a draft design brief.
 - 1.5 Clarify and confirm draft with client and team members.

- 2 Clarify stakeholder requirements.
 - 2.1 Assess input from stakeholders to confirm the responsibilities, requirements and limitations of the design brief.
 - 2.2 Commission site survey analysis and gather and use all relevant information to inform development of the brief.

- 3 Negotiate engagement with the client.
 - 3.1 Amend and formalise fee proposal and agreement.
 - 3.2 Detail scope of services to be undertaken within the contract and fee proposal with the client, either directly or by delegation to a team member.
 - 3.3 Present draft proposals to the client and use client feedback to modify and improve the proposal.
 - 3.4 Finalise design brief in compliance with client and stakeholder satisfaction.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - listen and question to clarify and negotiate stakeholder and client requirements and share information
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4028A Prepare design brief for construction works

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4028 Prepare design brief for construction works

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4028A Prepare design brief for construction works. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by preparing client design briefs for one residential and one commercial construction project.

In doing this, the candidate must:

- prepare the brief from compiled information through consultation with client and stakeholders
- compile a comprehensive construction design brief that includes the scope, scale and core details from commencement to completion of the works.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- current project plans, building specifications, codes and standards
- relevant government legislation
- financial, legal and administrative factors affecting the contractual relationship
- roles and responsibilities of stakeholders:
 - architects and designers
 - construction managers and site supervisors
 - principals and senior management of the building and construction company
 - regulatory bodies
 - services authorities
 - subcontractors
- scope of services provided by the organisation:
 - fee proposals
 - client profile and relationship to the building and construction company
 - cost-benefit analysis
 - financing options

- workplace safety requirements and workplace processes and procedures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- current relevant building and construction codes of practice and standards
- relevant government regulations
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment and technology, applications and software to prepare a design brief.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4029 Apply construction information to the sales process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4029B Apply construction information to the sales process. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply construction information in the sales process to develop the customer's knowledge of construction processes and the effects on contract and building timelines. It includes communicating accurate construction information to the client to contribute to a positive relationship between the client and the organisation.

This unit of competency applies to sales consultants and other professionals within the building and construction industry responsible for the marketing and sale of new residential and commercial constructions.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Identify pre-construction approvals. | 1.1 Obtain, read and apply organisational policies, procedures, client contractual and legal requirements relating to the construction process. |
| | 1.2 Identify scope of works and scheduled timeframes. |
| | 1.3 Identify nature and conditions of approvals, site establishment and facilities set-up and connection of temporary services. |
| 2 Explain the construction sequence to the client. | 2.1 Brief the client about construction public liability, indemnity and workers' compensation insurance. |
| | 2.2 Describe the construction process, main stages and approximate duration of construction. |
| | 2.3 Explain site establishment, set-up of facilities and connection of temporary services. |
| | 2.4 Outline trade contractor, materials and product delivery and other personnel access to site. |
| | 2.5 Give the client an overview of circumstances that affect progress and delays construction timeframes. |
| 3 Provide construction information. | 3.1 Provide information of long-term benefits of sustainable building solutions and other unique selling features. |
| | 3.2 Confirm accuracy of contractual requirements and construction information with client. |
| | 3.3 Review and resolve identified issues with client. |
| | 3.4 Follow organisational policies for recording and saving information. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - actively listen and respond accordingly to client questions
 - interpret non-verbal communication to reinforce or modify the interaction
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4029B Apply construction information to the sales process.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4029 Apply construction information to the sales process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4029B Apply construction information to the sales process. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying construction information to the sales process for one building and construction project.

In doing this, the candidate must:

- provide accurate, timely and understandable information to the client
- identify the nature of building approvals and their limitations, conditions and duration
- explain circumstances that can contribute to delays and the impact of those delays on the building process
- provide information of all builder's insurances required for the duration of the building and construction project.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building approvals and permits:
 - building licence
 - electricity supply permits
 - water service and sewerage connection
 - drainage and water disposal
 - Local Government Acts and building provisions
- building construction process and sequence of events
- industry conditions:
 - availability of labour and materials
 - provisions for inclement weather
 - subcontracting structure
- insurance cover:

- builder's all risk
- indemnity
- public liability
- workers' compensation
- site establishment requirements:
 - access and egress
 - drainage
 - earthworks
 - electricity supply
 - protection for adjoining owners
 - rubbish and waste disposal
 - signage
 - site facilities
 - water connection
- building and construction standards and codes
- digital tools and devices to communicate and collaborate effectively with others
- a range of digitally-based technology and applications to access, extract integrate and compile information.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant building and construction standards and codes
- building approvals and permits
- construction drawings, site plans and specifications
- construction contracts, organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- a range of digitally-based technology and applications to compile, record and save information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4030 Analyse and communicate industry information

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4030A Analyse and communicate industry information. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to research, analyse and communicate information about the building and construction industry environment and opportunities. It includes identifying competition and informing clients of investment opportunities.

It applies to sales consultants and other professionals within the building and construction industry responsible for the marketing and sale of new residential or commercial constructions.

This unit of competency is suitable for people operating with autonomy. A person working at this level would be expected to take responsibility for analysing and communicating industry information.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Review building industry environment.

1.1 Identify the internal and external operating factors of the building and construction operating environment.

- 1.2 Identify economic factors impacting on the housing industry.
 - 1.3 Collate information on geographic location of new subdivisions and characteristics and availability of land.
 - 1.4 Research the impact of social factors affecting the building and construction industry.
 - 1.5 Recognise and note personal perceptions of potential clients.
- 2 Identify competition to building and investment.
- 2.1 Investigate financial factors that support and oppose investment.
 - 2.2 Identify strengths and weaknesses of other competitive markets which compete for investments.
 - 2.3 Analyse industry products or services to benefit the customer.
 - 2.4 Determine the capacity to meet potential client requirements.
- 3 Communicate industry information.
- 3.1 Use organisational operating structures and industry productivity information effectively to attract customers.
 - 3.2 Interact and engage with the client to determine their needs.
 - 3.3 Explain the benefits of the industry's housing as a form of investment.
 - 3.4 Communicate the competitive nature of the industry marketplace as a strength benefiting the client.
 - 3.5 Explain alternative opportunities in speculative and project construction to the client.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - use appropriate protocols and conventions to communicate with a broad range people
- listening skills to:
 - process information and avoid misinterpretation of client requirements.

Unit Mapping Information

Supersedes and equivalent to CPCBC4030A Analyse and communicate industry information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4030 Analyse and communicate industry information

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4030A Analyse and communicate industry information. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by researching, preparing and submitting a current market analysis for the local region.

In doing this, the candidate must:

- outline the external and internal operating environment of the building and construction industry
- identify and evaluate economic and social factors impacting the local area, and perceptions of potential clients
- analyse the strengths and weaknesses of competing investment markets and opportunities
- provide detailed information to effectively meet client requirements
- adhere to organisational ethical and probity standards.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics of the marketplace which influence an individual's decision to invest in a building:
 - interest rate movements
 - perceptions about the investment value of the completed property
 - perceptions about the resale value of the property
 - perceptions about the value of the currency and possible movements
 - speculative ambitions
- economic factors, circumstances and seasonal factors that influence the volume of housing sales:
 - level of economic activity
 - availability of finance

- current interest rates
- competition for finance
- share market
- effects of investments for rental properties
- investor's personal perceptions:
 - about the investment value of the completed property
 - about the resale value of the property
 - about the value of the currency and possible movements
 - of potential interest rate movements
 - speculative ambitions
- influences effecting the capacity to meet client requirements:
 - availability of labour and materials
 - current financial situation
 - current order levels
 - projects already committed
- industry market segments and product range:
 - apartments
 - duplexes and triplexes
 - existing real estate properties
 - high-rise apartments
 - high-rise construction
 - holiday homes and resorts
 - mobile homes
 - retirement villages
 - terrace housing
- purchasing patterns and other socioeconomic factors:
 - business confidence
 - job security or insecurity
 - level of socioeconomic activity
 - migration
- government building and construction regulations, standards and codes
- legal and contractual requirements relating to building and construction.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and construction and contract legislation
- current building and construction codes and standards
- construction drawings and specifications
- organisational policies and procedures and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to transmit and receive information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4031 Process client requirements

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4031A Process client requirements.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to obtain, confirm and process client requirements from project inception through the contract and documentation development process.

It includes accurately conveying client requirements to those developing the contract and related documentation.

The unit of competency applies to sales consultants, site managers, forepersons, estimators and other professionals within the building and construction industry responsible for processing client requirements.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify client

1.1 Access, read and interpret relevant government

- requirements.
- construction legislation.
- 1.2 Identify local government requirements, restrictive covenants, necessary permits and planning requirements.
 - 1.3 Provide correct legal, technical and product information to the client.
 - 1.4 Arrange site investigation and identify site features and factors that may contribute to and influence the building design.
 - 1.5 Collate and discuss site and building information that may influence and effect the design requirements with client.
 - 1.6 Determine and confirm client requirements.
- 2 Prepare preliminary documentation.
- 2.1 Identify and follow organisational processes for preparing documentation.
 - 2.2 Identify and address documentation, design and copyright risks.
 - 2.3 Communicate requirements for sketch plans and drawings accurately to drafting personnel.
 - 2.4 Prepare and complete preliminary contract, agreement and estimated processing costs.
 - 2.5 Submit documents to the relevant department or person for checking and recording.
- 3 Establish client satisfaction.
- 3.1 Forward plans, developed documentation and estimated costs to client for review, amendment and approval.
 - 3.2 Confirm client's understanding of extent and cost of required site works.
 - 3.3 Identify variations and problem areas and analyse and rectify issues in consultation with client.
 - 3.4 Verify accuracy of amended documentation and ensure client requirements are met.

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|---|--------------------------------|-----|---|
| 4 | Finalise contract requirements | 4.1 | Check all plans, documents and specifications sighted by client are signed or initialled. |
| | | 4.2 | Compile signed documents and forward to relevant person for verification and processing for the next stage. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant project schedules and documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4031A Process client requirements

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4031 Process client requirements

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4031A Process client requirements.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by preparing contract documentation, drawings and specifications for a construction project that meets client requirements.

In doing this, the candidate must:

- research current and relevant local government building design requirements and approval processes
- select, complete and present construction contract and related project documentation to client for approval and formal acceptance.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building and construction legislation, codes and standards
- relevant sections of the National Construction Code (NCC)
- building and construction industry planning processes:
 - town planning and building application requirements
 - certifications from local authorities
 - building permits and approvals
- various types of building contracts and their application and legal requirements
- development of project plans and specifications:
 - site plans and sketches
 - design details
 - material specifications
- financial and business principles related to dealing with clients
- site evaluation and site works:
 - site location and suitability for intended use
 - site aspect, slope, drainage and surrounding sites

- site access and egress during construction
- site preparation, excavation and earthmoving.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- government building legislation
- relevant building industry and local authority codes and standards
- site plans and project contracts
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment and technology, applications and software to prepare client contracts, drawings, costings and other documentation to meet client requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4032 Apply contract law to sales processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4032A Apply contract law to sales processes. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply contract law to the sales processes for construction of residential and commercial buildings. It includes selection and administration of contract and pre-contract agreements.

This unit of competency applies to builders, site supervisors and related construction industry professionals responsible for ensuring contract law is applied to the sales process of building.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify legislative	1.1 Identify relevant government legislation relating to
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- requirements applying to the sales process.
- 1.2 Identify types and purposes of contracts employed within the building and construction industry.
 - 1.3 Identify pre-contract agreements that meet legal and organisational requirements.
 - 1.4 Identify pre-contract clauses within the agreement.
- 2 Apply contract law as it relates to the sales process.
- 2.1 Explain the importance of contract to sales process and implications of contract law to the client.
 - 2.2 Describe clauses in the contract to the client, the reasons for their inclusion and their impact.
 - 2.3 Explain the offer and acceptance element of a contract to the client.
 - 2.4 Apply common law principles, federal laws and contract standards and codes to the sales process.
 - 2.5 Apply cooling off periods, definitions of building work and provisional sum (PS) and prime cost (PC) allowances.
 - 2.6 Explain to the client contract anomalies and appropriate measures to be taken in the rendering of the contract.
- 3 Finalise the pre-contract agreement with customer.
- 3.1 Ensure clauses that reflect client's requirements are included in pre-contract agreement.
 - 3.2 Ensure documents are signed in accordance with legal and organisational requirements.
 - 3.3 Receive payment or deposit from client in accordance with legal and contractual requirements.
 - 3.4 Process and save documents following organisational procedures.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - use contract terminology relevant to the context
 - use written and oral communication to clearly confirm client understanding and agreement with contract clauses
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4032A Apply contract law to sales processes

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4032 Apply contract law to sales processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4032A Apply contract law to sales processes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying contract law to the sales process for one building and construction project.

In doing this, the candidate must:

- select the correct contract for the building project
- select the appropriate clauses and conditions within the contract and explain the reasons and impacts to the client
- administer the contract to meet government legal and regulatory requirements
- follow organisational procedures to apply contract law to the sales process
- determine and explain to the client appropriate measures to be taken in the event of anomalies in rendering the contract
- communicate and finalise pre-contract agreements with client.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- contract types and the circumstances they cover
- contract law and related government legislation and regulations
- legal meanings of terms and clauses in building and construction contracts
- definitions and interpretations commonly applied to contracts
- definitions of building work
- pre-contract agreements:
 - offer and acceptance documentation
 - preliminary contracts
 - preparation of plan agreements
- clauses in construction contracts:
 - cost adjustments

- extensions of time
- offers and acceptances
- payments
- retention of moneys
- scope of work
- terms and representations
- pre-contract clauses:
 - conditions
 - scope of work
 - time for completion
- relationship between the organisation and its clients.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- variety of construction contracts
- government contract law legislation and regulation
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- digital technology to access information and software to process and save contract documentation
- relevant building industry and local authority codes and standards
- site plans and project contracts

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4033 Maintain the sales environment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4033A Maintain the sales environment.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to maintain the sales environment, providing a clean and attractive location in which to promote and sell the organisation's products and services. It includes establishing and maintaining an environment that features up-to-date displays where potential customers can gather accurate information and discuss their ideas and options.

The unit of competency is suitable for sales consultants and other professionals within the building and construction industry responsible for the marketing and sale of new residential and commercial constructions.

This unit of competency is suitable for people operating with autonomy. A person working at this level would be expected to take responsibility for maintaining the sales environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------------|--|
| 1 Plan and organise the sales area. | 1.1 Obtain, read and interpret the organisation's products and services range. |
|-------------------------------------|--|

- 1.2 Plan the design of the display or presentation area to accommodate staff and client requirements.
 - 1.3 Provide facilities to a professional standard that cater for the comfort and needs of diverse customers.
 - 1.4 Arrange display or presentation area ensuring safe and adequate access, noise reduction, privacy and adequate lighting.
- 2 Arrange product information.
- 2.1 Design and present window and external displays in a manner to attract prospective customer attention.
 - 2.2 Set up internal displays at an appropriate level, within reach, ensuring that traffic through the area is not impeded.
 - 2.3 Provide product information that is accurate, understandable and attractively presented.
 - 2.4 Identify and highlight product visual features, design, specifications and cost advantages.
 - 2.5 Make enterprise promotional campaign materials available to all sales consultants.
- 3 Implement housekeeping requirements.
- 3.1 Use displays, sales areas and offices in accordance with organisational policies.
 - 3.2 Address housekeeping requirements, such as cleaning, lighting and room aesthetics, to maintain a pleasant and fresh environment.
 - 3.3 Develop a housekeeping schedule and notify organisation regarding maintenance requirements and costs.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCBC4033A Maintain the sales environment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4033 Maintain the sales environment

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and equivalent to CPCBC4033A Maintain the sales environment.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by maintaining a sales environment to market new residential or commercial constructions on at least three occasions.

In doing this, the candidate must:

- arrange the sales environment to cater for customer needs
- organise displays of product information without obstructing the movement of people.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- products and services offered by the organisation:
 - artist's impressions and sketches
 - brochures
 - colour charts
 - plans and drawings
 - price list
 - samples of materials and building products
- organisation's policies and procedures:
 - sales and promotions
 - management of display home or settings
 - diverse customer requirements
- work health and safety (WHS) legislation relating to public safety
- workplace safety:
 - risk assessment
 - lighting
 - electrical hazards

- cleanliness and hygiene
- contemporary and effective interior and exterior design solutions:
 - promotional, display and presentation area
 - exhibition spaces
 - front of office
 - mobile display spaces
 - portable display areas and stands
- housekeeping:
 - general cleanliness and hygiene of display areas
 - maintaining adequate lighting
 - maintaining the cleanliness of display racks and spaces
 - regular dusting and vacuuming
 - rubbish and litter removal
- digital tools and devices to communicate and collaborate effectively with others
- a range of digitally-based technology and applications to access, extract integrate and compile information.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a realistically simulated workplace environment.

Candidates must have access to:

- desks, chairs and office equipment required in a sales environment
- presentation drawings and specifications
- organisational policies and procedures
- current building and construction codes and standards
- promotional materials, banners, brochures and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to transmit and receive information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4052 Lead and manage teams in the building and construction industry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to lead, manage and engage with a variety of teams working in the building and construction industry. Building and construction industry work teams may include subcontractors and employees, with cultural, competency or other diversities, who are engaged on the project for different periods of time and at different times. It includes liaising with team supervisors or leading hands to establish team objectives, maintain team performance and progress and achieve project quality.

This unit of competency applies to builders, site supervisors and related construction industry professionals responsible for managing diverse work teams to complete projects to specifications and on time.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify responsibilities of work teams.

- 1.1 Identify project timeframes, stages of construction and scheduled commencement dates for work teams.
- 1.2 Interpret subcontractor and employee work obligations, conditions and limitations from contracts and associated documentation.
- 1.3 Clearly define and communicate team roles, responsibilities and accountabilities.
- 1.4 Develop effective communication systems to track team outcomes, progress, delays and any specific requirements.
- 1.5 Identify, implement and manage workplace safety requirements that apply to various teams.

2 Liaise with supervisors of teams.

- 2.1 Identify diversities within teams and negotiate support requirements.
- 2.2 Identify and resolve potential conflict within work teams, between other teams and between self and teams on a construction project.
- 2.3 Consult with supervisors and provide constructive feedback, information and advice to support teams and individuals to work together on a project and achieve quality work outcomes.
- 2.4 Conduct regular meetings and assist team supervisors to plan and prioritise team tasks and workload.
- 2.5 Actively encourage team members to participate in and take responsibility for team activities and communication processes.
- 2.6 Resolve issues relating to access to workplace areas where multiple teams intend to carry out work.
- 2.7 Issue improvement or safety breach notices to team supervisor or individuals.

- | | | | |
|---|---|-----|---|
| 3 | Monitor and manage team performance and progress. | 3.1 | Monitor teams' effectiveness, progress and work quality. |
| | | 3.2 | Delegate responsibilities to teams or team individuals to improve performance and productivity. |
| | | 3.3 | Monitor skills level of individuals within a team, evaluate and address training requirements. |
| | | 3.4 | Discuss barriers and issues that impact on performance and progress. |
| | | 3.5 | Address and solve current and potential problems. |
| | | 3.6 | Encourage active participation in work activities, innovation and initiative. |
| | | 3.7 | Monitor resource utilisation. |
| | | 3.8 | Record and save team information. |

Foundation Skills

As well as the Foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - select and use appropriate conventions and protocols when communicating with different teams
 - adapt personal communication styles to model required behaviour, build trust and positive working relationships and to show respect for the opinions and values of others.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4052 Lead and manage teams in the building and construction industry

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by leading and managing at least three different work teams on a building and construction project.

In doing this, the candidate must:

- manage teams with varying competency levels of workers
- work effectively and interact with team supervisors or leading hands to achieve quality work within set timeframes
- manage and support teams experiencing difficulties and take necessary action to rectify issues
- effectively manage communications with, and between diverse groups
- resolve negative interactions or problems between project teams.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- conditions and requirements of contracts and agreements
- government legislation relating to employment of employees and contractors
- delegation and work allocation
- workplace planning and performance measurement systems and processes
- diversity:
 - gender
 - culture
 - language
 - age
 - ability
- approaches to support teams and individuals and respond to diversity in the workplace
- cultural diversity and cultural values
- work teams:

- trades
- labourers
- suppliers
- administration support
- sales
- professionals
- team relationships and group dynamics
- duty of care when informing teams and allocating job tasks
- workplace procedures relating to on-site contractors
- workplace safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- industrial relations and work health and safety (WHS) legislation
- digital devices, applications and software to access, share and save information
- relevant building industry and local authority codes and standards
- workplace safety documentation.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC4053 Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCBC4001A Apply building codes and standards to the construction process for low rise building projects.

CPCBC4001A Apply building codes and standards to the construction process for low rise buildings has been split into two units, one for residential low-rise buildings and one for commercial low-rise buildings.

Attainment of both CPCBC4001 and CPCBC4053 is equivalent to CPCBC4001A.

Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to access, interpret and apply relevant building codes and standards applicable to National Construction Code (NCC) Class 2 to 9 Type C building projects. It includes knowledge of the structure of the NCC, as well as the ability to access relevant information from the code as applicable to various building projects.

It applies to builders, site managers and related construction industry professionals responsible for ensuring compliance with building codes and standards related to Class 2 to 9 Type C construction projects.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|--|---|
| 1 Classify buildings. | 1.1 Determine nature of building, its use and arrangement from construction plans and specifications. |
| | 1.2 Access, read and interpret relevant Australian Standards for commercial building and construction projects. |
| | 1.3 Define classification of building from NCC. |
| | 1.4 Identify and interpret multiple classifications from NCC. |
| 2 Determine construction compliance requirements from NCC. | 2.1 Identify NCC Performance Requirements relevant to Class 2 to 9 Type C building projects. |
| | 2.2 Determine range of criteria to ensure that construction methods comply with NCC Performance Requirements. |
| | 2.3 Identify and document non-conforming construction methods with NCC Performance Requirements. |
| | 2.4 Propose and discuss Performance Solution with design and building and construction professionals. |
| | 2.5 Analyse and apply Assessment Methods to determine compliance with Performance Solution or Deem-to-Satisfy Solution. |
| | 2.6 Meet the evidence of suitability requirements for building materials and products stated in the NCC. |
| | 2.7 Complete relevant documentation to meet NCC requirements. |

- | | |
|---|--|
| 3 Determine fire protection requirements. | 3.1 Identify NCC and other legislative requirements for passive and active fire control elements in buildings. |
| | 3.2 Determine level of fire resistance required for the construction of various buildings. |
| | 3.3 Check existing building for compliance with passive and active fire protection requirements. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCBC4001A Apply building codes and standards to the construction process for low rise building projects.

CPCBC4001A Apply building codes and standards to the construction process for low rise buildings has been split into two units, one for residential low-rise buildings and one for commercial low-rise buildings.

Attainment of both CPCBC4001 and CPCBC4053 is equivalent to CPCBC4001A.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC4053 Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes but is not equivalent to CPCBC4001A Apply building codes and standards to the construction process for low rise building projects.

Unit has been separated into two units for residential low rise and commercial low rise.

Attainment of both CPCBC4053 and CPCBC4001 is equivalent to CPCBC4001A. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying codes and standards to the construction process of two Type C building projects:

- one Class 2, 3 or 9
- one Class 5 to 8.

In doing this, the candidate must:

- determine the type of construction and the use of the building from construction plans and specifications and class of building using National Construction Code (NCC) classifications
- identify current building and construction codes and Australian Standards relevant to the building project
- apply NCC Performance Requirements in relation to the design and construction of the building:
 - structure
 - fire protection
 - access and egress
 - services and equipment
 - health and amenities
 - ancillary provisions
 - energy efficiency
- apply Performance Solutions to ensure that construction complies with Performance Requirements

- identify faults and problems and propose actions to rectify
- inspect a building to determine fire protection compliance with NCC and other legislative requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building legislation, codes and standards
- the NCC:
 - Performance Requirements and General Requirements
 - Performance Solutions and Assessment Methods
 - Deem-to-Satisfy Solution (DTS)
 - Performance Hierarchy
 - evidence of suitability for building materials and products
 - classes of building and types of construction
- Assessment Methods stated in the NCC:
 - comparison with DTS provisions
 - evidence of suitability
 - Expert Judgement
 - Verification Method
- below ground construction:
 - methods
 - structural sufficiency
 - water ingress
 - water proofing
 - work health and safety (WHS)
- organisational policies and procedures, quality systems and best practice approaches
- workplace safety requirements
- properties, characteristics and limitations of specified building materials and components
- processes, procedures and techniques for construction of wide span and complex designed buildings
- basic commercial building design principles and the behaviour of structures under stress, strain, compression, bending or combined actions
- causes and implications of building defects related to failure of applying building codes and standards to residential and commercial buildings
- extent of remedial work required for various defects caused by inadequate design and application of building codes and practices
- environmental requirements and sustainability principles and concepts
- project plans, specifications and structural details
- construction terminology.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and construction regulations
- current building and construction codes and standards
- NCC Volume 1
- construction drawings, site plans and specifications
- organisational policies and procedures and other quality documentation to undertake the performance criteria and assessment requirements
- digital technology devices, applications and software to source and document information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5001 Apply building codes and standards to the construction process for Type B construction

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5001B Apply building codes and standards to the construction process for medium rise building projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to access, interpret and apply relevant building codes and standards to the construction processes for Type B construction. It includes interpreting the National Construction Code (NCC) and other codes and standards related to a specific building.

It applies to NCC classifications:

- Commercial - Class 2 to 9, Type B

This unit of competency applies to builders, project managers and related construction industry professionals responsible for ensuring compliance with building codes and standards in the building and construction industry.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Classify buildings. | 1.1 Determine the nature, use and arrangement of buildings. |
| | 1.2 Apply NCC criteria to determine the defined building classification. |
| | 1.3 Identify relevant Performance Requirements of the NCC that apply to a project. |
| | 1.4 Identify compliance and assess non-compliance against the NCC Performance Requirements. |
| 2 Determine compliance solutions within the NCC. | 2.1 Determine Performance Solutions to meet the Performance Requirements. |
| | 2.2 Discuss options with relevant persons to necessitate design or construction change. |
| | 2.3 Apply Deem-to-Satisfy (DTS) solution with supporting evidence to comply with the Performance Requirements. |
| | 2.4 Consider Performance Solutions and supporting evidence to achieve compliance with Performance Requirements. |
| | 2.5 Document performance-based solutions in accordance with organisational quality procedures and processes. |
| | 2.6 Complete and compile relevant documentation and evidence that complies with NCC Performance Requirements. |
| 3 Apply fire protection requirements. | 3.1 Identify passive and active fire control elements required by relevant legislation. |
| | 3.2 Determine level of fire resistance required for the construction of buildings up to three storeys. |
| | 3.3 Apply NCC requirements with respect to passive and active fire protection to buildings up to three storeys. |
| | 3.4 Check passive and active fire protection requirements are applied during and on completion of works. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use applications to access, extract and share information.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5001B Apply building codes and standards to the construction process for medium rise building projects.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5001 Apply building codes and standards to the construction process for Type B construction

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5001B Apply building codes and standards to the construction process for medium rise building projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying building codes and standards to the construction of two Type B buildings:

- one Class 2, 3 or 9 and
- one Class 5 to 8.

In doing this, the candidate must:

- identify the National Construction Code (NCC) Performance Requirements of the project:
 - structure
 - fire resistance
 - access and egress
 - services and equipment
 - health and amenity
 - ancillary provisions
- determine Performance Solutions by applying performance based and Deem-to-Satisfy solutions or a combination of both to meet the Performance Requirements
- apply assessment methods, within the General Requirements of the NCC, to determine whether the solutions meet the relevant Performance Requirements
- apply evidence of suitability requirements, as stated in the National Construction Code (NCC), to repudiate non-conforming building products.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building and construction legislation, codes and standards
- contractual requirements
- the NCC:

- building classification
- Performance Requirements
- Performance Solutions
- Performance Hierarchy
- Assessment Methods
- Verification Methods
- comparison with Deem-to-Satisfy provisions
- evidence of suitability
- Expert Judgement
- causes and implications of building defects related to failure of applying building codes and standards to residential and commercial buildings
- extent of remedial work required for various defects caused by inadequate design and application of building codes and practices
- working drawings and specifications
- organisational quality assurance and policies and procedures

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current and relevant government building and construction Acts and regulations
- project plans and specifications
- building codes, standards and manufacturer's products and materials specifications
- the NCC
- technology, applications and software to access and source information.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5002 Monitor costing systems on complex building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5002A Monitor costing systems on medium rise building and construction projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to monitor costing systems for building and construction projects. It includes processes and practices involved in controlling costs, and the production and maintenance of expenditure schedules and other arrangements, to ensure contracts or projects remain on budget.

This unit of competency applies to builders, senior managers in building and construction firms, and other construction industry personnel who work independently and in groups to investigate, evaluate and report project costing.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Identify and classify project costs.
 - 1.1 Access, read and interpret current building codes of practice, standards, legislation and specifications.
 - 1.2 Identify construction costs and produce accurate estimations from project schedules.
 - 1.3 Define cost estimates appropriate to contract requirements and accurately translate into the correct cost centres.
 - 1.4 Identify cost centres and correctly incorporate into a planned project cost network.
 - 1.5 Undertake risk assessment and compare estimated cost with estimated risk.

- 2 Prepare schedules for project expenditure.
 - 2.1 Identify project critical points and prepare draft schedules of project expenditure.
 - 2.2 Produce hard copies of prepared expenditure schedules in line with organisational processes.
 - 2.3 Identify critical financial phases of the project and match cash flows to expenditure.

- 3 Create curves for projected cash flow and payments.
 - 3.1 Prepare interim payment claims and rise and fall calculations for contractors and subcontractors.
 - 3.2 Prepare projected S curve to show cash flow and resource control.
 - 3.3 Prepare and compare projected cash flow and payments using time risk and cost risk.
 - 3.4 Compare cash flows using early start and late finish for pessimistic or optimistic outcomes.
 - 3.5 Calculate pessimistic overdraft requirements.

- 4 Monitor and maintain expenditure.
 - 4.1 Monitor cash flow and creditor payments daily.
 - 4.2 Compare network budget cost to actual costs in the tender calculations.

- | | | | |
|---|----------------------------|--|--|
| | 4.3 | Calculate rise and fall expenditure and advise financial controller of variations. | |
| | 4.4 | Identify and analyse reasons for any cost variations. | |
| | 4.5 | Take necessary remedial action and record to retain contract financial compliance. | |
| 5 | Prepare final cost report. | 5.1 | Compare actual costs with estimates at the completion of the job and compile a report detailing future actions. |
| | | 5.2 | Adjust organisational rates as required, based on the final cost report and current movements in prices and rates. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
 - use and apply graphical techniques to analyse and compile costing information
 - research and investigate statistical and numerical data to measure performance against cost estimations
- technology skills to:
 - use a range communication tools and devices to communicate and collaborate effectively with others
 - use specialised programs to access, extract and share information in effective ways.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5002A Monitor costing systems on medium rise building and construction projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5002 Monitor costing systems on complex building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5002A Monitor costing systems on medium rise building and construction projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by monitoring the costing systems for a Class 2 to 9 Type A building and construction project.

In doing this, the candidate must:

- produce schedules of expenditure from comparing the extent of actual costs to estimated cost
- produce accurate and timely financial reporting in the format required by the organisation
- plan and continuously revise the schedules of payments and cash flows to match contract performance and efficiency.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- advanced estimating and costing systems used in the building and construction industry
- relevant government standards, codes of practice, legislation and licensing requirement for medium-rise construction projects
- building and construction costs:
 - building or construction materials
 - temporary on-site services and permanent utilities
 - human resources and specialist services labour
 - plant and equipment purchase, lease and operating
 - pre-cast and off-site prefabricated materials
 - consumables
- project finance cost centre
- financial principles:
 - evaluating and eliminating or reducing risk

- progress payments to maintain cash flow
- expenditure evaluation and overhead costs
- project cost reporting:
 - cost-benefit analyses of overtime payments
 - detailed summaries of actual costs against estimates
 - details of cost over-runs and savings on labour and contracting out
 - details of savings or under-expenditure on materials or supplies
 - equipment performance information and efficiencies
 - variations in rates occurring through rise and fall clauses and effects
 - wages, salaries and penalties
 - insurances, including workers' compensation premiums
- project processes and timelines.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant and current project plans, specifications, codes, standards and regulations
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- organisational systems for cash flow and payments
- technology and applications to access, extract, integrate and compile information to facilitate monitoring costing systems on a construction project.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5003 Supervise the planning of on-site building and construction work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5003A Supervise the planning of on-site medium rise building or construction work. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to supervise the planning process and organisation of on-site work for building and construction projects. It includes interpreting contract and planning requirements and developing strategies for scheduling human and physical resources effectively to comply with contractual obligations and meet planning timelines.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum three storeys
- Commercial - Class 2 to 9, Type B and C

This unit of competency applies to builders, related construction industry professionals and senior managers within building and construction firms who are self-directed and initiate and manage complex planning and scheduling.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Appraise project requirements. | 1.1 Access, read and interpret copies of building approvals and conditions relating to the building and construction project. |
| | 1.2 Review contracts to determine any unusual aspects of construction, conditions, use of materials or penalty provisions. |
| | 1.3 Identify possible design problems and bring to the attention of project consultants. |
| | 1.4 Review availability of subcontractors and their suitability to meet job requirements specific to a project. |
| | 1.5 Review availability of materials and conditions of purchase and payment. |
| | 1.6 Establish site access, temporary services and appropriate location of on-site facilities. |
| | 1.7 Establish and maintain contact with relevant statutory building authorities. |
| 2 Establish strategies and schedules. | 2.1 Establish the project's critical path and sequence planned project operations. |
| | 2.2 Develop project schedules incorporating delivery of physical resources and assignment of human resources. |
| | 2.3 Plan and schedule for the removal of existing services and hazardous materials in accordance with regulatory and environmental requirements. |
| | 2.4 Establish work health and safety (WHS) site requirements for rehabilitation procedures, hazard identification and risk management. |
| | 2.5 Develop project contingency strategies to consider anticipated delays. |
| | 2.6 Establish strategies for the control of multiple projects. |

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|---|-------------------------------|-----|--|
| 3 | Supervise on site operations. | 3.1 | Inspect and record condition and structural integrity of on-site and surrounding buildings to be retained. |
| | | 3.2 | Submit reports to owners and relevant stakeholders and retain copies. |
| | | 3.3 | Supervise removal of unwanted structures, disconnection of unutilised services and site preparation. |
| | | 3.4 | Direct location and positioning of on-site amenities and facilities and connection of temporary services. |
| | | 3.5 | Coordinate delivery dates and on-site locations for physical resources and materials. |
| | | 3.6 | Implement and maintain a resources control system for recording materials, equipment and personnel entering and leaving the site. |
| | | 3.7 | Manage data entry into an appropriate scheduling system for analysis. |
| | | | |
| 4 | Delegate and supervise staff. | 4.1 | Employ effective human resources and implement practices and policies which maximise performance and productivity. |
| | | 4.2 | Allocate staff to meet the demands of the project site or sites as stated in regulatory and organisational employment conditions. |
| | | 4.3 | Delegate and manage staff to hire and record physical resource activity and authorise payments. |
| | | 4.4 | Monitor activities against contractual requirements, facilitate adjustments to the project timeframe and advise management of cost-benefits and implications of providing overtime payments. |
| | | 4.5 | Maintain a safe, effective and productive work environment. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- planning and organising skills to:
 - sequence and schedule complex activities
 - reassess priorities and apply contingencies, as circumstances change, to meet scheduled timeframes
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use applications to access, extract and share information and data.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5003A Supervise the planning of on-site medium rise building or construction work.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5003 Supervise the planning of on-site building and construction work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5003A Supervise the planning of on-site medium rise building or construction work. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by supervising the planning of one on-site building and construction project for:

- a Class 1 and 10 building, to a maximum of three storeys, or
- a Class 2 to 9, Type B or C.

In doing this, the candidate must:

- translate contract requirements into construction plans and processes
- develop strategies that effectively maximise physical and human resource use
- apply construction planning processes that effect desired outcomes and meet proposed timeframes
- establish and maintain a workplace environment representative of good management practice.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building and construction legislation, codes and standards for construction
- building and construction industry contracts
- building and construction industry subcontracting system:
 - organisational and subcontracted human resources
 - human resource principles and practices
 - subcontractor requirements and availability
 - relevant licensing arrangements
 - rates and costs related to payments and claims
- on-site and off-site management practices, including:
 - on-site facilities

- plant and equipment
- power, water, telephone and other temporary services
- pre-cut or pre-cast components
- raw materials
- temporary site facilities
- construction planning process, including:
 - project scheduling
 - critical events and milestones
 - labour, materials and plant and equipment coordination
- workplace safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- relevant project plans, specifications, codes, standards and regulations for building class
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- technology and applications to access, extract, integrate and compile information
- national and state industrial relations legislation.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5004 Supervise and apply quality standards to the selection of building and construction materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5004A Supervise and apply quality standards to the selection of building and construction materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply quality standards to the selection of building and construction materials. It includes supervising the selection of building materials that meet building standards, contract specifications and service requirements for the project.

This unit of competency applies to builders, related construction industry professionals and project managers within building and construction firms responsible for supervising systems through which compliant and quality materials are selected, acquired and stored on site for construction of building projects.

This unit of competency applies to those who are self-directed and have substantial depth of knowledge and skills to make independent judgements.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Determine the properties of building materials. | 1.1 Access, read and interpret construction specifications and material standards. |
| | 1.2 Identify suitability of materials commonly used in the region for a given building system. |
| | 1.3 Determine properties of materials, their standards of quality and their compatibility and non-compatibility with different materials. |
| | 1.4 Identify environmental impacts of different materials. |
| | 1.5 Determine the impact of allowable tolerances on the conversion of naturally occurring materials. |
| | 1.6 Identify and check tolerances for installing and assembling materials regarding the nature of the work being performed and the requirements of Australian Standards. |
| 2 Select suitable building materials for application. | 2.1 Select building materials regarding structural requirements and suitability for the building system specified in the contract. |
| | 2.2 Select materials for their safety, required fire resistance rating, serviceability and cost effectiveness. |
| | 2.3 Consider short and long-term degradation of materials in relation to the proposed life cycle of the building. |
| | 2.4 Select alternative materials if specified materials are unavailable or unsuitable. |
| | 2.5 Arrange for expert advice as necessary to confirm or refute materials options. |
| | 2.6 Apply evidence of suitability, as stated in the National Construction Code (NCC), for all building materials and products. |
| 3 Supervise the | 3.1 Identify and communicate organisational procedures for |

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|---|---|
| acceptance, safe handling and storage of materials on site. | the acceptance, safe handling, storage and protection of materials on site. |
| 3.2 | Instruct workers on the process to refuse acceptance of substandard or non-compliant materials. |
| 3.3 | Determine limitations and effects of transportation on materials and components and take action in the case of potentially damaging circumstances. |
| 3.4 | Handle materials correctly and safely on site using appropriate equipment and safe work practices. |
| 3.5 | Store materials in accordance with manufacturer specifications and in compliance with the relevant standards. |
| 3.6 | Implement systems for inspecting all materials delivered on site for naturally occurring and/or manufactured defects before installation. |
| 3.7 | Ensure personnel are aware of actions to be taken in the case of defects caused by incorrect installation, application or placement. |
| 3.8 | Preserve timber and protect ferrous and non-ferrous metals used in the construction process using established methods. |
| 4 Supervise suitability and fit for purpose testing of materials. | 4.1 Carry out testing of materials, including soil, filling, compacting, surfacing, concreting and welding, to specifications and analyse results on site before and during installation. |
| | 4.2 Accurately identify samples of materials taken during placement or installation and send for laboratory testing. |
| | 4.3 Visually check materials for suitability before building and send materials off site for testing, as required. |
| | 4.4 Implement processes to ensure defective materials are identified and remedial action is recorded. |
| 5 Establish, record and report findings. | 5.1 Establish and maintain records of tests and testing procedures completed by the organisation in accordance with its quality management obligations. |

- 5.2 Evaluate test results and reports periodically to maintain integrity of organisational quality standards.
- 5.3 Notify non-conforming on-site material tests immediately to the appropriate organisation officer for further action.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - liaise verbally and/or in writing with manufactures, suppliers and industry experts and regulators about materials and effectively resolve material quality or compliance issues
 - communicate organisational procedures to workers
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5004A Supervise and apply quality standards to the selection of building and construction materials.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5004 Supervise and apply quality standards to the selection of building and construction materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5004A Supervise and apply quality standards to the selection of building and construction materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying quality standards to the selection of specified construction materials and supervising on-site processes for acquiring, receiving and storing materials for one building and construction project.

In doing this, the candidate must:

- identify and interpret building and construction materials specified in the project building specifications or contract documentation
- communicate effectively with manufacturers and suppliers to issue evidence of suitability for building materials and products
- supervise acceptance, handling and storage of materials
- confirm delivered material and products against delivery orders and compliance with project specifications
- conduct materials testing:
 - arranging external quality testing or inspections and receive results
 - arranging on-site quality and fit-for-purpose testing
 - taking remedial action for non-conforming test results
- provide advice and information to regulatory authorities as required by the organisation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- determining and evaluating materials and products from project plans, specifications, codes and standards
- building and construction materials and technologies and alternative materials and products
- characteristics, applications and limitations of building material, products and components

- non-compliant building materials and products and the evidence of suitability requirements in the National Construction Code (NCC)
- environmental effects on building and construction materials
- construction supply processes
- processes for the selection of building materials:
 - identifying materials from specifications and drawings
 - identifying specifications and standards described in contract documents
 - selecting and ordering materials that meet those requirements
- maintaining records:
 - completing appropriate organisational records
 - distributing copies in accordance with organisational policy
 - following up reports that indicate departures from quality or manufacturing requirements
 - obtaining appropriate records and reports for review and analysis
- workplace safety:
 - hierarchy of control
 - hazardous manual handling tasks
 - safe use of mechanical lifting equipment
 - licensing and competency requirements to safely operate lifting equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- the NCC
- relevant and current project plans, specifications, codes, standards and regulations
- manufacturer's product and equipment specifications and information
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- technology, applications and software to access, extract and record information and develop relevant documentation.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5005 Select and manage building and construction contractors

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5005A Select and manage building and construction contractors. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to select and manage building and construction contractors. It includes identifying and quantifying project resource needs and engaging with contractors to determine contract conditions and evaluating their performance.

This unit of competency applies to builders and senior managers within building and construction firms and other construction industry personnel who engage and manage various contractors with diverse occupations.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Determine subcontractor requirements.	<p>1.1 Assess subcontractor resource requirements based on expected operations and reference to the business plan.</p> <p>1.2 Manage, prioritise and document subcontractor requirements based on expected work sequence and volume.</p> <p>1.3 Conduct and manage task analyses to identify competences from the nature of the work to be done and organisational structure.</p> <p>1.4 Determine the type and number of subcontractors and develop a formal subcontractor structure for the project.</p> <p>1.5 Research industrial relations legislation and contract legal matters to clarify workplace obligations and subcontractor rights that impact on operations.</p>
2 Review subcontractor performance.	<p>2.1 Build an operational profile for each subcontractor from reviewed and identified existing subcontractor areas of expertise.</p> <p>2.2 Examine existing subcontractor's previous work profiles and history to gather information on their performance.</p> <p>2.3 Review subcontractor performance to identify strengths and weaknesses.</p> <p>2.4 Develop a management plan for each subcontractor to enhance their ability to meet contractual obligations.</p>
3 Establish terms and conditions for subcontractor engagement.	<p>3.1 Develop or review subcontractor terms of engagement and scope of operations to ensure obligations can be met under the contract.</p> <p>3.2 Review subcontractor terms of engagement and periodically reinforce to ensure conditions are met.</p>
4 Manage the selection	4.1 Develop and facilitate subcontractor engagement

and engagement of subcontractors.		strategies and processes to meet organisational timelines and contract dates.
	4.2	Manage processes for selection and engagement of subcontractors to ensure that equal opportunity principles apply to all applicants.
	4.3	Manage subcontractor short-listing and qualification checking to enable the selection and engagement of the most appropriate subcontractor.
	4.4	Notify successful and unsuccessful applicants about the outcomes of the selection process.
	4.5	Manage and implement processes for commencement, induction and any required pre-engagement training.
5 Evaluate subcontractor performance.	5.1	Develop and manage systems that evaluate subcontractor performance and compliance with contract requirements.
	5.2	Collect strategic information regarding subcontractor performance within the collection parameters and terms of confidentiality and security.
	5.3	Discuss performance review outcomes with subcontractors on a confidential and equitable basis.
	5.4	Introduce and manage feedback and appeal systems to ensure that subcontractors can challenge review outcomes.
	5.5	Undertake remedial or disciplinary action against the subcontractor in accordance with organisational policy and operational guidelines where appropriate.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- speaking skills to:
 - negotiate appropriate solutions when engaging with subcontractors during selection and performance reviews
 - question and confirm requirements and clarify any misinterpretations that may create issues

- listening skills to:
 - to interpret responses to understand other's perspectives
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5005A Select and manage building and construction contractors.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5005 Select and manage building and construction contractors

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5005A Select and manage building and construction contractors. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by selecting and managing building and construction contractors for one building and construction project.

In doing this, the candidate must:

- identify subcontractor needs against current and projected workloads and contractual commitments and the business plan of the organisation
- manage the subcontractor selection, engagement and appointment process to meet project timeframes:
 - developing and managing terms of engagement for subcontracting opportunities
 - advising interviewees of the outcome of the selection process
 - undertaking referee and credit checks to determine subcontractor performance and financial viability
 - ensuring selection interviews with subcontractors meet the determined criteria
 - undertaking contractual arrangements between the organisation and successful subcontractors
- action and remediate below standard subcontractor performance.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- industrial relations legislation, structures and processes
- organisational quality assurance requirements relating to contracts and contractors
- contracts, workplace agreements and relevant licensing arrangements

- industry subcontracting system and industry benchmarks for subcontractors
- subcontractor administration and performance management systems:
 - work sequence and nature of job roles
 - project timeframe from start to finish
 - quantum of hours required to perform the work
 - performance benchmarks within subcontracts
 - project meetings and provision of progress reports
 - performance monitoring against project timelines and objectives
 - performance management where performance is sub-standard or inappropriate:
 - anecdotal evidence, including input from project managers and administrators
 - examination of data provided by the subcontractor
 - input about subcontractor performance from other organisations
 - observation of the subcontractor on other project sites
 - using subcontractor performance records from previous associations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- industrial relations and privacy legislation and appropriate awards and workplace agreements
- construction project plans, specifications, codes and standards
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- technology, applications and software to access, extract, integrate and compile information and data, and securely retain documentation and records

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5006 Apply site surveys and set-out procedures to building projects up to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5006B Apply site surveys and set-out procedures to medium rise building projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply site surveys and set-out procedures to building and construction projects up to three storeys. It includes the skills and practices required to set out building projects, measure, record and interpret data using measuring and levelling equipment.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum three storeys
- Commercial - Class 2 to 9, Type B and C.

This unit of competency supports builders, surveyors and related construction industry professionals who have responsibility for applying design concepts and principles to survey and site set-out on building and construction projects up to three storeys.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|---|
| 1 Assess and select levelling equipment. | 1.1 Identify specialised levelling and surveying equipment available on large building projects for various set-out and levelling procedures. |
| | 1.2 Research and record differences between types of specialised surveying equipment. |
| | 1.3 Identify components of levelling devices. |
| 2 Select, test and operate levelling devices. | 2.1 Select levelling devices appropriate for the set-out |
| | 2.2 Perform basic tests on levelling device accuracy in accordance with manufacturer specifications. |
| | 2.3 Calculate and record effects of maladjustment in levelling devices using standard operating procedures (SOPs). |
| | 2.4 Carry out temporary adjustments to set up levelling equipment in accordance with SOPs. |
| | 2.5 Determine horizontal and vertical angles using levelling devices. |
| 3 Conduct site set-out. | 3.1 Obtain, read and identify site information and dimensions from project working drawings, site plan and surveyor's plans. |
| | 3.2 Access, read and follow relevant workplace safety requirements. |
| | 3.3 Identify correct location of survey pegs prior to positioning pilot pegs. |
| | 3.4 Locate profile pegs at a working distance from survey pegs and parallel to pilot line. |
| | 3.5 Set out overall of building and load bearing members to plans and specifications. |
| | 3.6 Check vertical accuracy of each survey to a tolerance of |

10 mm using different levelling devices.

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| 4 | Compute grid distances and coordinates. | 4.1 | Calculate coordinates and bearings, distances related to grids and general set-out work. |
| | | 4.2 | Demonstrate angular relationship between different bearings (whole circle). |
| | | 4.3 | Calculate bearing and distance between coordinates. |
| | | 4.4 | Calculate coordinates of a point given the bearing and distance from a point with known coordinates. |
| | | 4.5 | Determine offsets from a coordinated point given the bearing and distance from a point with known coordinates. |
| | | 4.6 | Determine information necessary to set-out a structure using a site plan. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
 - interpret, calculate and transfer project plan dimensions to on site set-out.
- technology skills to:
 - use a range of sophisticated levelling equipment to optimise set-out outcomes
 - use applications to access, extract and share information.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5006B Apply site surveys and set-out procedures to medium rise building projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5006 Apply site surveys and set-out procedures to building projects up to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5006B Apply site surveys and set-out procedures to medium rise building projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by site surveying and setting out one building project, up to three storeys.

In doing this, the candidate must:

- use two different surveying and levelling devices
- apply survey and levelling principles for site set-out
- perform calculations and conversions using collected survey data.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- design principles and work drawings and specifications
- the National Construction Code (NCC) and Australian Standards
- building systems and application to survey and site set-out
- level and grade checking used to perform survey control to accuracy criteria
- functional and operational features of surveying and levelling equipment:
 - electronic distance measuring (EDM) equipment
 - laser
 - optical levels
 - peg methods
 - theodolite
- workplace safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- project working drawings, specifications and site set-out plans
- relevant building, safety and environmental legislation
- current relevant building codes and standards
- at least two survey and levelling devices
- relevant computer software packages and technology applicable to collecting, calculating, analysing and recording survey data.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5007 Administer the legal obligations of a building and construction contractor

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5007B Administer the legal obligations of a building or construction contractor. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to administer the legal obligations of a building and construction contractor, as either party to a contract. It includes maintaining legal obligations, licensing and registration, and managing systems for ensuring compliance with legislation.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum three storeys
- Commercial - Class 2 to 9, Type B and C.

This unit of competency applies to builders, senior managers within building and construction organisations and other construction industry personnel responsible for administering and ensuring contractor obligations and responsibilities are fulfilled for building and construction projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of CPCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Establish legal requirements of the business. | 1.1 | Secure business registration of the organisation in accordance with owner/operator preferences and legal requirements. |
| | 1.2 | Seek approval of licensing and registration as a contractor/supervisor from the appropriate government agency. |
| | 1.3 | Investigate and meet legal responsibilities of operating a construction business. |
| | 1.4 | Complete, submit and maintain accurate and secure legal documents and records. |
| 2 Engage personnel for the project. | 2.1 | Identify and interpret relevant industrial awards for the hiring of staff or labour. |
| | 2.2 | Determine contracts of employment on a case-by-case basis and implement the principles and legalities of workplace agreements. |
| | 2.3 | Apply equal opportunity principles in all aspects of recruitment and selection of staff and other personnel. |
| | 2.4 | Follow procedures for employment termination and redundancy. |
| | 2.5 | Establish, document and implement dispute resolution processes as necessary. |
| | 2.6 | Identify and implement workers compensation policies. |
| 3 Meet work health and safety (WHS) requirements. | 3.1 | Comply with WHS legislation. |
| | 3.2 | Investigate and apply for necessary approvals or permits from WHS authority prior to work commencing. |
| | 3.3 | Inform workers of their rights and responsibilities and ensure a safe workplace that complies with legislative requirements. |

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| | 3.4 | Adhere to regulations relating to noise abatement and working hours. |
| | 3.5 | Inform workers of personal and organisational obligations and ensure that workers have been inducted. |
| | 3.6 | Facilitate and implement rehabilitation arrangements for employees returning from injury or illness. |
| | 3.7 | Assist workers returning to work after injury or illness to regain full employment status as soon as practicable. |
| 4 | Administer business obligations. | |
| | 4.1 | Collect, record and make taxation and Goods and Services Tax (GST) payments in compliance with Australian Taxation Office (ATO) requirements. |
| | 4.2 | Calculate and contribute individual worker's superannuation entitlements. |
| | 4.3 | Evaluate and attain adequate personnel, property and project work insurance policies. |
| | 4.4 | Implement and maintain consumer fair trading practices ethically, effectively and efficiently. |
| 5 | Comply with environmental requirements. | |
| | 5.1 | Introduce and use renewable materials as a primary aim, wherever possible, over non-renewable materials. |
| | 5.2 | Minimise use of high energy materials and introduce low energy materials where practical. |
| | 5.3 | Implement processes to ensure compliance with environmental protection and sustainability requirements. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- writing skills to:
 - complete legal documents and records
- communication skills to:

- liaise verbally and in writing with government agencies
- provide information to employees and other stakeholders
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5007B Administer the legal obligations of a building or construction contractor.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5007 Administer the legal obligations of a building and construction contractor

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5007B Administer the legal obligations of a building or construction contractor. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by administering the contractor's legal obligations of one building or construction project.

In doing this, the candidate must:

- advise appropriate authorities and gain the necessary approvals or responses
- establish and maintain good human relations with contracted employees, subcontractors and other stakeholders
- manage organisational taxation and insurance obligations

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Commonwealth and state/territory legislation and regulations appropriate to the operations of the business:
 - Building Code of Australia (BCA)
 - Australian Consumer Law (ACL)
 - Australian Securities and Investments Commission (ASIC)
 - public liability, workers compensation, property and project work insurance requirements
 - industrial relations Acts and regulations
 - privacy
 - superannuation contributions
 - work health and safety (WHS)
 - environmental and sustainability
- Australian Tax Office (ATO) requirements
- builder's registration and licensing requirements
- return to work and rehabilitation arrangements

- employees and subcontractor's awards and agreements
- building industry codes of practice and standards
- Australian Business Licence and Information Service (ABLIS)
- local building authority regulations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a realistically simulated workplace environment.

Candidates must have access to:

- current and relevant Commonwealth and state and territory legislation for businesses
- relevant codes, standards and regulations for operating a business
- copies of appropriate awards, workplace agreements and contracts
- business equipment and technology to access information, lodge documentation and records, securely store legal documentation and records and facilitate administration of legal obligations of a building or construction contractor.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5009 Identify services layout and connection methods for Type B and C constructions

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5009A Identify services layout and connection methods to medium rise construction projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to identify services requirements, layouts and connections from project drawings and specifications for Type B and C construction projects. It includes identifying and evaluating differing layouts for services to comply with building codes, regulations and standards.

This unit of competency applies to builders, project managers and related construction industry professionals responsible for determining services layouts using design concepts and principles relating to installations.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Evaluate layout for water storage supply. | 1.1 Sketch layout for residential water supply and connection from a town supply or tank storage to comply with relevant building regulations and standards. |
| | 1.2 Document single and two-stage pumping systems used to maintain water levels in storage tanks. |
| | 1.3 Identify and address limitations of multi-function and single function services connected to water storage tanks. |
| 2 Evaluate layout and methods of sewerage and drainage disposal. | 2.1 Sketch sewerage connection and layout in accordance with relevant building regulations and standards. |
| | 2.2 Assess number of fixtures and building type to determine stack type. |
| | 2.3 Identify fixture units. |
| | 2.4 Determine appropriate connection methods of main drains to local authority sewers against relevant building standards. |
| | 2.5 Assess disposal of sewerage from fixtures situated below the level of the local authority sewer. |
| | 2.6 Monitor collection, treatment and disposal of prohibited discharges for non-domestic buildings. |
| 3 Assess layout of mechanical ventilation. | 3.1 Identify and sketch methods of mechanical ventilation and air distribution. |
| | 3.2 Check mechanical ventilation and air distribution system design layout is appropriate to the building design and complementary to other services. |
| 4 Evaluate the range of hot water systems. | 4.1 Evaluate operating principles of various types of hot water systems. |
| | 4.2 Select suitable hot water system according to accepted and agreed requirements and specifications. |
| 5 Evaluate lighting for a | 5.1 Identify roof construction used and outline methods for |

range of situations.		appropriate daylight transmission.
	5.2	Compare various service situations with methods of artificial lighting used.
6 Determine compliance of fire protection.	6.1	Identify authorities involved in plan perusal and site inspection for the various building classifications.
	6.2	Identify requirements for sprinkler systems and fire hoses for the various building classifications.
	6.3	Address fire detector and alarm systems and the application of fire doors.
	6.4	Identify extinguishing agents and their applications.
7 Plan installation of electrical and electronic services.	7.1	Identify electrical supply connection to site and comply with appropriate authority.
	7.2	Implement electrical design and provision for services.
	7.3	Identify and outline electronic cabling, type of service, categories of cabling, layout of equipment, safe guards, access for maintenance, repair and extensions.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5009A Identify services layout and connection methods to medium rise construction projects.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5009 Identify services layout and connection methods for Type B and C constructions

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5009A Identify services layout and connection methods to medium rise construction projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by determining, documenting and conveying layout and connection methods to a range of services appropriate to Type B and C constructions, which may be undertaken over several projects and must include:

- water supply
- sewerage and drainage disposal
- mechanical ventilation and air distribution
- hot water systems
- natural and artificial lighting
- fire protection
- electrical and electronic.

In doing this, the candidate must:

- apply design concepts and principles relating to performance of service installations
- identify typical faults and problems and take remedial action
- comply with the National Construction Code (NCC) and Australian standards.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building legislation, codes and standards
- the NCC
- project drawings, details and specifications
- organisational work practices and procedures
- manufacturer specifications and installation instructions
- properties, characteristics and limitations of specified materials, products and components
- service installation terminology and definitions

- water supply:
 - single and two-stage pumping for multi-function and single function
 - tank storage supply relative to the public water supply and reservoir heights
 - town supply
- sewage connection and layout:
 - graded or vertical discharge pipes
 - inspection shafts and overflow relief gullies (ORGs)
 - local authority sewerage drainage system
 - septic or biochemical treatment unit
- methods of mechanical ventilation:
 - air conditioning applications
 - air distribution, including mechanical ventilation requirements for enclosed car parks
 - air filtration, including air filters, ducting and main filter types
 - mechanical ventilation
- hot water system:
 - area to be serviced
 - energy sources available
 - height of installation
 - number of outlets
 - type of occupancy
 - type of system
- lighting:
 - emergency lighting
 - natural and artificial lighting
- electronic cabling factors:
 - access for maintenance, repair and extension
 - categories of cabling:
 - data
 - lift controls
 - power supplies
 - telecommunications
 - layout of equipment:
 - computers
 - telephones
 - safe guards
 - type of service.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant state and territory building legislation codes and standards
- the NCC
- manufacturer's specification and installation instructions
- project plans, details and specifications
- technology, equipment and applications to access, extract, integrate, compile and produce information and drawings necessary to identify services layout and methods of connection.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5010 Manage construction work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5010B Manage construction work.
Updated to meet the Standards for Training Packages 2012..

Application

This unit of competency specifies the skills and knowledge required to manage on-site work for building and construction projects to meet commercial contractual obligations. It includes establishing effective communication processes, managing risks and work health and safety (WHS), managing processes for ordering materials and installing equipment, as well as management of on-site operations.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum three storeys
- Commercial - Class 2 to 9, Type B and C.

This unit of competency applies to builders, related construction industry professionals and senior managers within building and construction firms responsible for monitoring and measuring actions and coping with contingencies to meet scheduled timeframes on medium-rise construction work and/or commercial building projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of CPCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|-----|--|
| 1 Establish site communication processes. | 1.1 | Read, interpret and follow organisational quality management requirements. |
| | 1.2 | Establish and manage site communication processes. |
| | 1.3 | Organise dates and times of-site meetings and notify relevant personnel. |
| 2 Establish site safety procedures. | 2.1 | Establish and implement on site safety and welfare requirements to meet WHS legislation and make available to all workers on site. |
| | 2.2 | Identify plant and equipment that require operator licensing to comply with risk management procedures and state and territory licensing requirements. |
| | 2.3 | Establish and implement hazard management procedures and instigate precautionary measures. |
| | 2.4 | Address hazardous manual handling tasks and inform workers of their responsibilities. |
| | 2.5 | Establish construction safety procedures and identify key personnel. |
| | 2.6 | Establish and manage safety induction procedures in the event of dangerous incidents, injuries and accidents. |
| | 2.7 | Develop and implement safety reporting processes and documentation in accordance with organisational and legislative requirements. |
| 3 Manage supply of materials and equipment. | 3.1 | Establish and manage a timely and cost-effective process for ordering, receiving, checking and safely stacking and protecting materials. |
| | 3.2 | Establish, manage and monitor procedures for selecting, hiring and maintaining plant and equipment. |

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| 4 | Manage on-site operations. | 4.1 | Maintain a safe and cost-effective work environment to achieve schedules and meet contractual obligations. |
| | | 4.2 | Manage and coordinate human resources and subcontractor obligations to ensure compliance with company operations. |
| | | 4.3 | Apply contingencies to deal with problems and delays affecting performance and project timelines. |
| | | 4.4 | Manage industrial relations issues in accordance with established company policy and regulatory guidelines. |
| | | 4.5 | Revise project schedules, as necessary, and document variations to assist with meeting of timeframes. |
| | | 4.6 | Implement a quality management system to create a continuous improvement environment in which operational procedures are monitored, analysed and reported. |
| | | 4.7 | Facilitate variations to approved project plan and specifications with contractual parties and statutory authorities. |
| | | 4.8 | Implement multi-site management plans in accordance with organisational policy and site conditions. |
| 5 | Manage processing of progress payments. | 5.1 | Validate and approve progress claims and payments in accordance with contract requirements. |
| | | 5.2 | Manage project expenditure and check claims against scheduled projected costs for accuracy. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - liaise with subcontractors, staff, clients and local or regulatory authorities
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others

- use equipment and programs to access and extract information and develop relevant documentation.
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Unit Mapping Information

Supersedes and is equivalent to CPCBC5010B Manage construction work.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5010 Manage construction work

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCBC5010B Manage construction work.
Updated to meet the Standards for Training Packages 2012..

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by managing on-site construction work of one Class 1 to 10, maximum of three storeys, or a Class 2 to 9, Type B or C building project.

In doing this, the candidate must:

- interpret project material specifications in design documentation and procure quality, compliant materials, products and components
- manage at least one variation to the contract
- manage project financials, with timely payments for completed work
- manage on-site safety, personnel and resources to achieve project outcomes.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- work health and safety (WHS) Acts and regulation
- on-site safety:
 - hierarchy of control
 - duty of care
 - hazardous manual handling
 - risk assessment
 - rehabilitation and return to work requirements
 - environmental management requirements and sustainability principles
- construction methodologies:
 - planned methods of construction
 - construction constraints
 - risks and opportunities
 - temporary and permanent works and services
 - electrical cabling

- plumbing and gas piping systems
- temporary lighting and power outlets
- wastewater disposal systems
- fire suppression systems
- government codes, standards and regulations
- the National Construction Code (NCC)
- Australian Business Licence and Information Service (ABLIS)
- organisational quality management processes and procedures:
 - building and construction industry contracts
 - managing expenditure
 - communicating with regulatory authorities to ensure compliance with their requirements
- allocation and management of human resources:
 - dispute resolution
- selection and hiring physical resources:
 - relevant licensing arrangements
 - lifting equipment
- on-site communication:
 - emails
 - face-to-face verbal communication
 - mobile and fixed telephone contact
 - site diaries
 - written reports and memoranda
- properties, characteristics and limitations of approved materials:
 - concrete and pre-formed concrete
 - raw construction materials, such as sand, aggregate, timber and cement
 - sarking, insulation, air conditioning ducting and roofing
 - production of materials and prefabrication of products off site.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current relevant building, industrial relations and consumer legislation
- the NCC and other relevant codes and standards

- project plans and schedules, construction drawings, site plans and specifications
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment and technology, applications and software to facilitate effective management of construction work.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5011 Manage environmental management practices and processes in building and construction

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

PC 2.4 has been amended to read: 'Evaluate a new project to determine its impact on existing environmental planning obligations.'

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5011A Manage environmental management practices and processes in building and construction. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to plan and implement effective environmental practices and processes and manage improvements of environmental issues. It includes determining and managing energy efficient systems, measuring and dealing with non-conforming practices and improving performance.

This unit of competency applies to builders, senior managers and other construction industry professionals responsible for developing effective environmental management plans and strategies to reduce environmental risk on building and construction projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|--|---|
| 1 Prepare an organisational environmental management plan. | 1.1 Analyse the potential impact on the organisation of current shifts in environmental legislation or regulations. |
| | 1.2 Determine current environmental management performance using best practice and benchmarking methods. |
| | 1.3 Analyse project requirements in relation to environmental obligations. |
| | 1.4 Prepare an environmental management plan using available information. |
| | 1.5 Seek senior management advice concerning implementation of the plan as required. |
| 2 Manage environmental management plan implementation. | 2.1 Inform staff and contractors of their obligations to comply with the environmental plan. |
| | 2.2 Monitor staff and contractor compliance with implementing the environmental plan. |
| | 2.3 Manage the effectiveness and accuracy of the environmental data gathering systems. |
| | 2.4 Evaluate a new project to determine its impact on existing environmental planning obligations. |
| | 2.5 Contact local authorities and regulatory bodies where the plan requires ongoing external monitoring or overseeing. |
| | 2.6 Communicate information to staff and stakeholders concerning updates to the environmental management plan. |
| | 2.7 Manage and evaluate the environmental management plan and track changing circumstances to maintain organisation compliance. |
| 3 Monitor organisational legal obligations. | 3.1 Manage organisational feedback systems to assist with conformance of the plan. |

- 3.2 Seek regular feedback concerning the operations of the environmental management plan to assist the organisation to meet its legal obligations.
 - 3.3 Manage and maintain legally required auditing practices to ensure probity and accountability towards legislative requirements.
 - 3.4 Maintain contact with contractors and monitor their compliance with environmental management requirements.
 - 3.5 Implement emergency and remediation response strategies as necessary to assist compliance with the environmental management plan.
- 4 Review environmental management plan.
- 4.1 Review environmental management plan to identify areas that need actioning or improvement.
 - 4.2 Introduce measures to encourage staff to suggest innovations to improve the performance of the environmental management plan.
 - 4.3 Redraft plans to include improvements or address deficiencies found during the review process.
 - 4.4 Submit revised plans for endorsement by senior management and implement reviewed procedures.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5011A Manage environmental management practices and processes in building and construction.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5011 Manage environmental management practices and processes in building and construction

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

PC 2.4 has been amended to read: 'Evaluate a new project to determine its impact on existing environmental planning obligations.'

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5011A Manage environmental management practices and processes in building and construction. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing, implementing and managing an effective environmental management action plan for one building or construction project.

In doing this, the candidate must:

- determine the impact of environmental legislation on the project
- research current trends in environmental management and controls
- assess the recording and reporting system's effectiveness and efficiency
- manage organisational improvement processes to reduce environmental risk and non-conformance.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- current environmental legislative and regulatory requirements and obligations
- environmental management planning:
 - environmental management practices and methodologies
 - environmental prohibitions or restrictions applied within specific projects
 - formally or informally gathered information concerning environmental issues and requirements
 - key people to be consulted or included in decision making

- specific forms of activity to be pursued or which are subject to monitoring or evaluation
- timeframes and key environmental benchmarks to be achieved
- current trends in environmental management and controls
- benchmarking and the establishment of environmental goals
- penalties for various breaches and non-conformity
- environmental data gathering and feedback systems
- statistical analysis methodologies.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- environmental legislation, regulations and requirements
- government building legislation
- building and environmental codes and standards
- business equipment and technology, applications and software to facilitate effective management of environmental practices and processes in building and construction.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5012 Manage the application and monitoring of energy conservation and management practices and processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5012A Manage the application and monitoring of energy conservation and management practices and processes. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to monitor energy conservation and manage practices and processes within the building and construction industry. It includes applying energy practices and methodologies, statistical analysis, current trends and factors in energy conservation, and legislative and regulatory requirements.

This unit of competency applies to builders, senior managers within building and construction firms and other industry professionals responsible for determining and recording the effectiveness and efficiency of energy conservation to meet organisational targets.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare the organisation energy conservation and management plan.
 - 1.1 Review organisational policies and operational guidelines for energy conservation and management.
 - 1.2 Analyse the potential impact on the organisation of current shifts in environmental legislation or regulations.
 - 1.3 Use best practice and benchmarking methods to determine current energy conservation and management performance.
 - 1.4 Identify opportunities for energy conservation and savings within the immediate work area and on project sites.
 - 1.5 Consult with staff and contractors for ideas and suggestions concerning organisational energy conservation.
 - 1.6 Prepare an energy conservation and management plan based on available information.
 - 1.7 Seek advice from senior management, as required, concerning implementation of the plan.
 - 1.8 Develop an environmental management plan.

- 2 Manage the energy conservation plan.
 - 2.1 Inform staff and contractors of their obligations in implementing the energy conservation and management plan.
 - 2.2 Manage the energy data-gathering systems for maximum efficiency and accuracy and make changes as necessary.
 - 2.3 Determine the impact of new projects on existing energy conservation planning.
 - 2.4 Encourage staff and contractor participation to achieve the plan's objectives and monitor their compliance.
 - 2.5 Identify difficulties, obstructions or factors that impact on the achievement of the energy conservation plan and take measures to address them.
 - 2.6 Communicate information concerning updates of the plan to staff and stakeholders.
 - 2.7 Evaluate strategies to ensure that organisational

objectives are achieved.

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| 3 | Monitor the energy conservation plan. | 3.1 | Use organisational feedback systems to assist with compliance and management of the plan. |
| | | 3.2 | Obtain regular feedback on the efficiency and operations of the energy conservation and management plan from staff and contractors. |
| | | 3.3 | Identify and promote energy savings throughout the organisation. |
| | | 3.4 | Implement strategies to assist with compliance of the energy management plan regarding reported energy wastage. |
| 4 | Evaluate and recommend changes to the energy conservation and management plan. | 4.1 | Review and action identified areas of improvement to maintain compliance with plan. |
| | | 4.2 | Introduce measures to encourage staff to suggest more efficient procedures and innovations to improve the performance of the energy conservation and management plan. |
| | | 4.3 | Redraft plans to include improvements or address deficiencies identified during monitoring. |
| | | 4.4 | Amend and submit revised plans to senior management for approval. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- analytical skills to:
 - assess variations in energy management performance and identify reasons for variations
- communication skills to:
 - enable clear and direct communication of environmental management plan requirements, and seek feedback on improvement initiatives
- technology skills to:

- use communication tools and devices to communicate and collaborate effectively with others
- use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5012A Manage the application and monitoring of energy conservation and management practices and processes.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5012 Manage the application and monitoring of energy conservation and management practices and processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5012A Manage the application and monitoring of energy conservation and management practices and processes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by developing, implementing and monitoring effective energy conservation and management action plans and strategies for one building and construction project.

In doing this, the candidate must:

- research current trends in energy conservation and management
- monitor and record effectiveness, efficiency and compliance of the organisation's standards and identify areas for improvement
- conform to relevant environmental and sustainability legislation, regulations and requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- environmental and sustainability requirements
- development, application and monitoring of energy conservation plans:
 - gathering and evaluating formal or informal information and data
 - researching current energy conservation trends and factors
 - energy management practices and methodologies
 - conformance, milestones and performance targets
- energy data-gathering systems:
 - reports from suppliers
 - scheduled management meetings and briefings
 - statistical and analytical data supporting energy objectives
 - feedback from authorities
 - spot checks on aspects of energy management process

- benchmarking and best practice:
 - comparison of current, previously established and external energy conservation and management plans
 - costs associated with optimum environmental conformance
 - performance indicators against energy management objectives
 - performance measuring against industry, local authority, regulatory or international standards
 - energy targets, electrical power usage, fuel usage, heat loss and thermal efficiency
 - statistics of measurements from start, ongoing and at conclusion
- organisational policies and practices supporting energy conservation and management.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- environmental legislation, regulations and local jurisdictional requirements
- government building legislation
- organisational energy data and costs and product manufactures energy specifications
- building and environmental codes and standards
- business equipment and technology, applications and software to facilitate effective management of environmental practices and processes in building and construction.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5013 Manage professional technical and legal reports on building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5013A Develop professional technical and legal reports on building and construction projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manage the development of technical and legal reports on buildings and commercial construction projects. It includes pre-property inspections and reports, building design and planning advice and reviewing and monitoring construction works.

This unit of competency applies to builders, senior managers, building consultants and other construction industry personnel who advise on building design processes and conduct inspections to develop building and construction reports.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Perform pre-purchase property inspections and assessments.
 - 1.1 Inspect building and identify and document defects to the agreed level of detail requested by a client.
 - 1.2 Obtain engineers' certificates according to the state of repair or number and type of defects.
 - 1.3 Estimate rectification costs to the degree of accuracy required or recommend demolition of the structure.
 - 1.4 Conduct feasibility studies at the direction of government agencies, financial institutions or investment houses.

- 2 Advise and coordinate the design process and planning approval.
 - 2.1 Prepare a project brief on behalf of client.
 - 2.2 Assess site conditions and structure.
 - 2.3 Produce or obtain preliminary design drawings and estimate probable costs.
 - 2.4 Coordinate a process through which final design documentation will be completed and approved by a client.
 - 2.5 Submit documentation to obtain authorised planning approval for the project.
 - 2.6 Prepare and present planning appeals to the authority, as necessary.

- 3 Review building or construction works.
 - 3.1 Check contract documentation to ensure client interests are protected.
 - 3.2 Monitor building or construction works regularly and provide reports on the progress and quality of work.
 - 3.3 Check variations and refer to contractors as required.
 - 3.4 Check and approve progress claims.

- 4 Provide advice on dispute resolution.
 - 4.1 Negotiate disputes on behalf of the client.
 - 4.2 Provide impartial advice to the parties involved in a building related dispute for equitable settlement.

- 4.3 Provide referrals for expert legal interpretation of contractual matters.
- 4.4 Provide expert testimony and evidence in the event of disputes going to court.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to:
 - engage in oral negotiations and explore complex issues to reconcile and resolve disputes
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5013A Develop professional technical and legal reports on building and construction projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5013 Manage professional technical and legal reports on building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5013A Develop professional technical and legal reports on building and construction projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by preparing, from contract requirements, a construction project feasibility study, including advice on building, site use, plans and processes.

In doing this, the candidate must:

- maximise the effectiveness of resources, and oversee the building and construction works to effect contractual outcomes
- coordinate the design process and obtain planning approval
- address assessment of any controversy or doubts.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building and construction legislative requirements:
 - construction industry contracts including quantities establishment, rates and costs related to payments and claims
 - building and construction industry subcontracting system
 - relevant licensing arrangements
 - human resource principles and practices
- work health and safety (WHS) Acts and regulations
- workplace safety requirements
- relevant state or territory building and construction codes, standards and regulations:
 - National Construction Code (NCC)
 - zoning and compliance with laws and by-laws by local authorities
- environmental and sustainability requirements:
 - Environment Protection Authority (EPA)
- building and construction quality practices and processes:

- planning
- management of on and off-site operations technical and legal requirements
- engineering approvals by architectural or design consultants
- final design or specification client approvals
- finance approvals by lending bodies
- feasibility studies, including related information from:
 - architectural or engineering practicalities
 - availability and quantum of finance
 - availability of services and conditions governing service provision
 - change of use for existing buildings
 - confirmation of ownership
 - development on vacant land
 - encumbrances or caveats on property
 - environmental factors or constraints
 - existing buildings/structures for a given purpose
 - most cost-effective method of building for a given site or location
 - refurbishment costs of buildings/structures
 - special conditions that may apply to developments
- identification of defects through property inspections:
 - adjoining properties
 - confirmation of boundaries
 - on-site inspections of buildings, structures or features
 - site access and egress
 - topographical and geological surveys.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- relevant government building and environmental legislation
- current relevant codes and standards
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment and technology, applications and software to facilitate management of the development of technical and legal reports.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC5018 Apply structural principles to the construction of buildings up to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5018A Apply structural principles to the construction of medium rise buildings. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to apply structural principles to the construction of buildings up to three storeys. It includes applying structural principles that meet building codes and standards.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum three storeys
- Commercial - Class 2 to 9, Type B and C.

This unit of competency applies to builders, project managers and related construction industry professionals responsible for ensuring the structural integrity of materials as well as building and construction work so that site safety and quality control measures are maintained during residential and commercial projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

CPCBC5001 Apply building codes and standards to the construction process for Type B construction

CPCBC4053 Apply building codes and standards to the construction process for Class 2 to 9 Type C buildings

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|--|-----|---|
| 1 Apply structural principles to planning | 1.1 | Identify main structural principles that apply to the construction of residential and commercial buildings up to three storeys. |
| | 1.2 | Identify structural elements from project plans and specifications. |
| | 1.3 | Analyse and interpret performance characteristics of building materials and apply them to the planning of the construction work. |
| 2 Coordinate and manage site and job set-up. | 2.1 | Implement processes to analyse the stability of soils and capacity of the site to support the construction loads. |
| | 2.2 | Identify structural requirements for retaining walls in conjunction with related industry professionals and apply them to the planning process. |
| | 2.3 | Analyse structural function and requirements for temporary structural elements and apply to the planning process. |
| 3 Coordinate and manage construction of footing systems. | 3.1 | Check set-out of a building for compliance with documented building plans. |
| | 3.2 | Assess structural performance of specified footings in the specifications for compliance with accepted construction principles and relevant building codes. |
| | 3.3 | Excavate, prepare and lay footings to meet compliance with relevant building codes and accepted industry construction principles. |

- | | | |
|--|-----|---|
| | 3.4 | Check damp coursing, termite barriers and provisions for tie-down in accordance with building codes and standards. |
| 4 Coordinate and manage structural elements of the construction process. | 4.1 | Identify and analyse technical construction principles and performance characteristics of construction materials in the project plan. |
| | 4.2 | Manage the installation of services in accordance with building plans with allowable tolerances stated in building codes and standards. |
| | 4.3 | Confirm compliance of the construction processes of structural elements in conjunction with specialist personnel and implement those processes. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC5018A Apply structural principles to the construction of medium rise buildings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5018 Apply structural principles to the construction of buildings up to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5018A Apply structural principles to the construction of medium rise buildings. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying structural design principles to one residential or commercial construction project up to three storeys, with below ground construction as specified by the National Construction Code (NCC) classification.

In doing this, the candidate must:

- accurately apply design principles relating to performance
- coordinate the support of the structural components by applying temporary structure elements
- identify typical faults and problems and rectify as required.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building and construction legislation and regulations
- building codes, specifications and standards:
 - NCC
 - Australian Standards
 - project specifications
- design principles and behaviour of structural members undergoing stress, strain, compression, bending or combined actions
- below ground construction:
 - methods
 - structural sufficiency
 - water ingress
 - water proofing
 - site safety requirements

- properties, characteristics and limitations of structural materials:
 - concrete, including reinforced, pre-stressed concrete and tilt-up panels
 - composite steel and concrete
 - masonry
 - steel (cold-formed steel) and aluminium
- applications of structural principles in buildings:
 - dead and live load calculations and characteristics
 - fire resistance of materials
 - impact of thermal effects
 - impact of time-dependent effects, including creep and shrinkage
 - impact of wind, snow, groundwater, earthquake, liquid pressure, rainwater and earth pressure actions
 - structural resistance of forms of construction
 - structural resistance of materials
- project working drawings and specifications
- work health and safety (WHS) and organisational quality procedures and processes
- temporary structural elements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant state and territory building and safety legislation, codes and standards
- environmental requirements and sustainability principles
- manufacturer's specification and installation instructions for materials specified in a project
- project plans, work drawings and specifications
- business equipment and technology, applications and software to facilitate effective application of structural principles to the construction and demolition of a building.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBC5019 Manage building and construction business finances

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to manage and administer finances within a building and construction business. It includes managing business financial risks, revenue and expenditure and meeting statutory financial obligations.

This unit of competency applies to builders, site supervisors and related construction industry professionals responsible for managing organisational finance systems to ensure the financial viability of a building and construction business.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Identify requirements of the business. | 1.1 Identify building and construction business legislation, regulations and operational and business requirements. |
|--|---|

- 1.2 Recognise areas of the business requiring expert advice and assistance to meet compliance.
 - 1.3 Establish business systems and programs to manage business financial requirements and remain up to date and compliant with industry and business changes.
 - 1.4 Conduct a risk assessment to determine adverse outcomes and consequences.
 - 1.5 Interpret obligations and responsibilities of managing building and construction finances.
- 2 Manage business finances.
- 2.1 Review project budgets and scheduled progress payments to schedule project expenses over the life of the project.
 - 2.2 Manage cash flow, pay supplier and contractor invoices and retain taxation records.
 - 2.3 Manage receipt of revenue and progress payments, and action processes for outstanding debt.
 - 2.4 Monitor financial health of the business regularly to identify potential problems and take appropriate action.
 - 2.5 Introduce options to improve the financial position of the business.
 - 2.6 Maintain and save accurate financial records.
- 3 Process taxation, insurance and payments.
- 3.1 Lodge and pay taxes and employee liabilities that apply to a building and construction business.
 - 3.2 Review and adjust all insurance cover to accommodate business growth or changes to business operation.
 - 3.3 Process payments to employees on time and contractors and suppliers by the due date.
 - 3.4 Monitor loan and interest repayments.
 - 3.5 Review ongoing business finances against project budgets.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC5019 Manage building and construction business finances

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by managing the business finances for a building and construction business over at least six months of business activity and including at least one building and construction project.

In doing this, the candidate must:

- manage business financial systems and processes
- schedule, monitor and process incoming and outgoing payments
- manage budgeting, cash flow and debt recovery
- lodge monthly, quarterly or annual statements and pay tax and workplace liabilities for the registered business
- conduct a business financial risk assessment.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- economic and industry trends
- financial concepts:
 - revenue streams
 - expenses
 - project costings
 - contingency planning
 - business overheads
 - profit
- key government sources for industry information
- Australian Consumer Law
- Competition and Consumer Act
- Australian Taxation Office (ATO) obligations for building and construction businesses:
 - income tax

- capital gains tax
- payroll tax
- fringe benefits tax
- pay as you go (PAYG) instalments
- goods and services tax (GST)
- tax differences between a sole trader and a company
- registering for taxes
- methods of paying taxes
- maintaining business and taxation records
- accounting systems:
 - types of invoices
 - invoicing and collecting payments
 - budgeting and reporting
 - end of financial year
- payment methods:
 - credit and debit card
 - direct debit
 - cheque
 - cash
- analysing business finances:
 - financial health check
 - sales calculators
 - profit ratios
 - liquidity and finance ratios
- options to improve business financial position:
 - recover outstanding debt
 - reduce or rearrange expenses
 - sell assets
 - increase prices
 - consolidate debt
 - track and improve cash flow
- insurance policies:
 - public liability
 - builders' risk
 - income loss
 - workers compensation
 - commercial vehicles
- contractual financial arrangements:
 - payment subject to quality of work
 - product quality and compliance

- terms and conditions of payment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- financial documentation and other quality documentation to undertake the performance criteria and assessment requirements
- digital devices, applications and software to monitor, manage and record business finances
- government business legislation.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6001 Apply building codes and standards to the construction process for large building projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6001B Apply building codes and standards to the construction process for large building projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to access, interpret and apply relevant building codes and standards applicable to the construction processes of large, high-rise and complex buildings. It includes ensuring building design and specifications comply with the National Construction Code (NCC) and related standards for large residential or commercial building projects.

This unit of competency applies to builders, project managers and related construction industry professionals who make a range of critical decisions in relatively complex situations and take responsibility for their actions.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction.

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Interpret relevant codes and standards' requirements.	1.1 Identify relevant clauses from the NCC that apply to individual open classification projects.
	1.2 Determine scope of works and prescriptive requirements relevant to the NCC.
	1.3 Access and interpret requirements of relevant Australian Standards referenced in the NCC.
2 Classify buildings.	2.1 Determine the nature of buildings according to use and arrangement.
	2.2 Apply NCC criteria to determine the defined classification.
	2.3 Identify and interpret NCC requirements for multiple classifications.
3 Apply solutions to construction problems.	3.1 Determine the range of NCC criteria required to ensure project compliance.
	3.2 Identify alternative, compliant solutions for construction problems to comply with NCC Performance Requirements.
	3.3 Meet the Performance Requirement of the NCC by applying a Performance Solution supported by one or a combination of the Assessment Methods.
	3.4 Use a Deem-to-Satisfy (DTS) solution supported by one or a combination of Assessment Methods to meet NCC compliance.
	3.5 Use a combination of Performance Solutions and DTS solutions to comply with the Performance Requirements of the NCC.
	3.6 Identify and complete relevant documentation to meet Performance Requirements of the NCC.
	3.7 Discuss compliance options with relevant construction personnel to ensure compliance with NCC Performance Requirements.

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| 4 | Apply fire protection requirements. | 4.1 | Determine fire resistance required for the construction of all classes and types of buildings. |
| | | 4.2 | Identify and apply NCC requirements with respect to passive and active fire protection to all classes and types of buildings. |
| | | 4.3 | Check existing buildings for compliance with passive and active fire protection requirements according to NCC requirements. |
| 5 | Implement strategy to manage construction compliance. | 5.1 | Establish strategies to manage construction compliance of large, complex and high-rise buildings with the NCC. |
| | | 5.2 | Implement and coordinate the work of professionals involved in the development and management of the building process. |
| | | 5.3 | Seek effective design solutions for buildings of more than three storeys to meet the needs of clients and ensure compliance with the NCC. |
| | | 5.4 | Design and implement quality assurance processes to ensure effective and compliant management of the construction process. |
| | | 5.5 | Detect non-conforming building materials and products and manage the evidence of suitability as required in the NCC. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - lead discussions to explore solutions to complex design problems
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6001B Apply building codes and standards to the construction process for large building projects.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6001 Apply building codes and standards to the construction process for large building projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6001B Apply building codes and standards to the construction process for large building projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by applying building codes and standards to one building project over three storeys, with below ground construction to meet the requirements of the National Construction Code (NCC).

In doing this, the candidate must:

- interpret and apply relevant General Requirements and Performance Requirements of the NCC to the building project
- apply compliance options and determine Assessment Methods to verify and support compliance with the Performance Requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building and construction legislation
- building standards and codes
- the NCC:
 - building classification
 - Performance Requirements
 - Performance Solutions
 - Performance Hierarchy
 - Assessment Methods
 - evidence of suitability
 - Verification Methods
 - comparison with Deem-to-Satisfy provisions
 - Expert Judgement
- working drawings and specifications

- organisational quality assurance, policies, procedures and workplace safety requirements
- definitions and technical building terms
- design principles and the behaviour of structures under stress, strain, compression, bending or combined actions
- properties, characteristics and limitations of building materials, products and components
- below ground construction:
 - methods
 - structural sufficiency
 - water ingress
 - water proofing
 - work health and safety (WHS).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current and relevant government building Acts and regulations
- design brief drawings, project plans, construction schedules and specifications
- building and related industry codes, standards and manufacturer product information and materials specifications
- the NCC
- technology, applications and software systems for accessing, researching, extracting, analysing and presenting information, interpreting data and developing documents and reports.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6002 Generate and direct the development of new projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6002A Generate and direct the development of new projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to generate and direct the development of new projects in a building and construction organisation involved in either residential or commercial projects.

This unit of competency applies to builders, project managers and related construction industry professionals who collate, analyse and synthesise detailed information from a range of sources to create, supervise and control the development of new projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify potential new 1.1 Examine the organisation's project history to identify

- projects.
- 1.2 Review the property and construction market for available sites and buildings with development potential.
- 1.3 Monitor new trends in development and construction.
- 1.4 Analyse available statistical data on possible areas of project development.
- 1.5 Use network contacts to source businesses requiring new or upgraded facilities.
- 1.6 Short-list most promising projects and prepare preliminary costings and returns.
- 2 Formulate development proposals and feasibility studies.
- 2.1 Review short-listed projects to facilitate selection of preferred options for detailed design work.
- 2.2 Develop project briefs.
- 2.3 Review the environmental impact of projects and assess any existing environmental impact statements.
- 2.4 Carry out feasibility studies on the project's commercial viability and ascertain the capacity to generate income through the various alternatives.
- 2.5 Generate accurate costings for each proposal.
- 2.6 Hold discussions with potential clients and investors and explain the benefits and risks of each project.
- 2.7 Decide to proceed once client and investor agreement is obtained.
- 3 Negotiate project approvals.
- 3.1 Submit project plans to relevant authorities to seek their reaction and identify any impediments to project approval.
- 3.2 Revise project plan to comply with authorities' directives.
- 3.3 Resubmit plans for formal planning approval as necessary.

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| 4 | Obtain project finance. | 4.1 | Approach finance institutions or investors for financial support. |
| | | 4.2 | Obtain suitable finance package for the project from institutions or investors. |
| | | 4.3 | Identify and approach possible joint partners for the project and determine interest. |
| 5 | Manage the commissioning of a project. | 5.1 | Appoint and retain project consultants. |
| | | 5.2 | Prepare documentation for proposed project, check against the brief and send for formal building approval. |
| | | 5.3 | Complete detailed costing of approved documentation. |
| | | 5.4 | Make modifications to the project to bring it within or under budget if required. |
| | | 5.5 | Make final decision to proceed with the project or defer to a future date. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- writing skills to:
 - prepare project briefs, plans and associated documentation for stakeholder /investor review, financial support and building approvals
- analytical skills to:
 - interpret statistical data and apply calculations
 - interpret strategic and often ambiguous information to develop logical, supportable and practical decisions
- planning and organising skills to:
 - sequence and schedule complex activities
 - utilise existing structures and systems to coordinate activities or design new processes as required
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others

- use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6002A Generate and direct the development of new projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6002 Generate and direct the development of new projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6002A Generate and direct the development of new projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by generating and directing the development of one new building and construction project.

In doing this, the candidate must:

- select and deploy human and physical resources to enable new project to be developed
- conduct an in-depth analysis of collated information and data to inform a feasibility study
- identify possible financial constraints and investigate financial options and investors.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- appropriate sector of the building and construction industry and nature of the contracts upon which its activities are based
- factors to be considered in assessing the risk inherent in different types of building and construction projects
- business administration principles commensurate with organisational needs and financial options:
 - bank or finance company loans
 - customer or client funding
 - overdrafts
 - personal venture capital
 - speculative funds provided for investment
- industry industrial relations climate and practices
- legislative, regulatory, and administrative obligations incumbent on the building and construction industry:
 - work health and safety (WHS)
 - environmental requirements and sustainability principles and concepts

- employment and financial practices
- feasibility studies:
 - detailed analyses of markets and opportunities
 - examination of possible extensions to existing projects
 - gathering data from government or private sector publications
 - personal investigation of opportunities
 - socioeconomic and urban studies.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current and relevant government building Acts and regulations, codes and standards
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- organisational financial reports and business data
- industrial relations legislation, awards and agreements
- technology, applications and software systems for accessing, researching, extracting, analysing and presenting information, interpreting data, calculating costs and developing documents and reports to facilitate development of new projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6003 Establish, maintain and review contract administration procedures and frameworks

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6003A Establish, maintain and review contract administration procedures and frameworks. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manage organisational contract administration procedures and frameworks for building and construction projects. It includes establishing and maintaining a contract management system necessary to produce accurate and successful project outcomes in accordance with organisational guidelines.

This unit of competency applies to builders, project managers and related construction industry professionals responsible for coordinating and managing building and construction projects.

This unit of competency is suitable for those using cognitive, technical and communication skills to analyse, plan, design and evaluate approaches to unpredictable problems and/or management requirements.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|--|-----|--|
| 1 | Establish contract administration procedures and frameworks. | 1.1 | Establish contract administration team comprising of persons with wide experience and knowledge in the building and construction industry. |
| | | 1.2 | Develop overview of the organisation's current legal and administrative climate and communicate this to the contract administration team. |
| | | 1.3 | Develop strategic plan for construction contract administration procedures and frameworks. |
| | | 1.4 | Establish information gathering mechanisms that draw strategic performance advice from all parts of the organisation. |
| | | 1.5 | Develop and implement quality assurance measures as part of the contract administration process. |
| | | 1.6 | Develop and establish reporting and feedback structures through which advice and action instructions can be conveyed to employees and subcontractors. |
| | | 1.7 | Establish benchmarks for contract performance and introduce a management framework for achieving, maintaining and exceeding those parameters. |
| | | 1.8 | Develop and introduce measures through which contract defaulters can be managed back into contract compliance. |
| 2 | Maintain contract administration procedures and frameworks. | 2.1 | Introduce policy and administrative guideline documentation that supports the contract administration process. |
| | | 2.2 | Develop and implement evaluation and review methods to ensure administration procedures and frameworks are effective. |
| | | 2.3 | Initiate internal feedback systems and methods to ensure that difficulties with administration of contracts are resolved within organisational guidelines. |

- 2.4 Introduce measures which ensure the safety and security of contract administration documentation.
 - 2.5 Maintain overall corporate contract administration framework comprising of employees, subcontractors, client and management.
 - 3 Review contract administration procedures.
 - 3.1 Develop, implement and manage review, recording and evaluation system to ensure probity and effectiveness of the contract administration system.
 - 3.2 Implement and manage regular scheduled and unscheduled reviews of contract administration procedures.
 - 3.3 Undertake formal evaluation of the contract and administration system regularly in consultation with organisation's legal advisors.
 - 3.4 Review and clarify operating procedures.
 - 3.5 Review contract documentation processes and provide feedback to those preparing contracts.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - consult with staff, stakeholders, clients and legal advisors
 - direct activities of personnel involved in contract administration processes
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and complex data to analyse for strategic purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6003A Establish, maintain and review contract administration procedures and frameworks.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6003 Establish, maintain and review contract administration procedures and frameworks

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6003A Establish, maintain and review contract administration procedures and frameworks. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by establishing a contract administration framework and monitoring its effectiveness across two different building or civil construction projects.

In doing this, the candidate must:

- establish contract administration system quality assurance measures, processes and procedures to achieve organisational benchmarks for contract performance
- evaluate and review the compliance, effectiveness and probity of the framework.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- appropriate sector of the building and construction industry and nature of the contracts upon which its activities are based
- factors to be considered in assessing the risk inherent in different types of building and construction projects
- financial and business administration principles commensurate with organisational needs
- human resource practices and the industry's industrial relations climate and practices:
 - employment conditions
 - individual organisational contracts
 - enterprise agreements
 - subcontractor contractual arrangements
- legislative, regulatory, and administrative obligations incumbent on the building and construction industry:
 - work health and safety (WHS)
 - environmental requirements and sustainability principles and concepts
 - employment and financial practices

- contract administration procedures and frameworks:
 - authorised courses of action
 - dispute resolution
 - document and contract distribution
 - document preparation, completion and handling
 - internal and external communication models
 - progress and contract performance reviews
 - response times
 - staff roles and organisational procedures
- organisational policies and procedures:
 - safety and security measures
 - confidentiality in contract handling
 - documentation security identification
 - limitations on contract access
 - limitations on contract circulation
 - limitations on document distribution
 - security and protection of document filing and storage
- quality assurance measures:
 - distributing information
 - establishing performance benchmarks for system
 - maintaining a quality dialogue with all parties to the construction process
 - managing within organisational policy
 - monitoring internal expenditures and funding allocations
 - obtaining adequate feedback from clients, subcontractors and suppliers
 - providing feedback and developing remediation procedures
 - responding to external legislation and regulation requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current and relevant government building, privacy and consumer law Acts and regulations
- regulations, codes and standards relevant to contracts and contract administration
- construction contracts relevant to the projects

- business technology, applications and software systems for accessing, researching, extracting, analysing and presenting information, interpreting data and developing documents and reports.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6005 Manage tender developments for major projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6005A Manage tender developments for major projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manage the development of tenders for major projects. It covers the facilitation, implementation and management of the tender development system in a building and construction organisation involved in residential and/or commercial projects.

This unit of competency applies to builders and senior managers in building, construction and services who use sound economic business and resource data to manage complex projects and processes and are responsible for managing tender developments for major projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate contract risk. 1.1 Review and analyse an invitation to tender.

- 1.2 Obtain and examine in detail contract documents pertinent to the project.
 - 1.3 Examine and confirm conditions of contract in accordance with legislative and organisational requirements.
 - 1.4 Verify the organisation's current workload to determine capacity to meet contract timelines.
 - 1.5 Conduct risk analysis and investigate and establish the degree of risk in the project.
 - 1.6 Consult the management team in relation to likely construction approach and resources.
 - 1.7 Advise client of the intention or otherwise to submit a tender response.
- 2 Manage the tender process.
- 2.1 Allocate staff members to tender preparation process.
 - 2.2 Supervise staff contact with subcontractors and suppliers to obtain quotations for services or physical resources.
 - 2.3 Manage and supervise the development of pre-tender construction or project schedule.
- 3 Manage the development of human and physical resource costs.
- 3.1 Monitor determination of equipment and materials charge-out rates.
 - 3.2 Manage the establishment of labour rates for elements of work.
 - 3.3 Analyse project elements to ensure they conform to organisational contracting processes.
 - 3.4 Arbitrate on rates applied to elements of the work to ensure they compare to relevant existing records of costs.
 - 3.5 Supervise staff members to ensure appropriate rates are applied to the bill of quantities.
 - 3.6 Review and monitor extensions of human and physical resource costs to ensure their accurate translation into the estimate summary.

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| | 3.7 | Monitor extended values for preliminaries and overheads calculated by staff. |
| | 3.8 | Monitor staff to ensure they are calculating and including all supplementary costs. |
| 4 Prepare complete tender documentation and operating margins. | 4.1 | Review and assess conditions of contract to ensure there are no variations to the tender. |
| | 4.2 | Review and assess subcontractor quotes to ensure there are no variations to the tender. |
| | 4.3 | Check and confirm availability of plant and equipment. |
| | 4.4 | Confirm delivery schedules and follow up material suppliers. |
| 5 Evaluate tender documentation prior to submission. | 5.1 | Supervise and manage staff engaged in the preparation of the schedules which detail the sequence of work. |
| | 5.2 | Monitor progress of the tender development for timeliness and accuracy. |
| | 5.3 | Review documentation to ensure that the tender is finalised for the client in standard industry format. |
| | 5.4 | Appraise final tender documentation for completeness and allocation of critical rates and allowances prior to submission. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - direct the activities of personnel involved in the tender development process
 - delegate tasks
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract and share strategic information.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6005A Manage tender developments for major projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6005 Manage tender developments for major projects

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCBC6005A Manage tender developments for major projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by managing the development of tenders for one building and construction project.

In doing this, the candidate must:

- develop a tender that comprehensively addresses project requirements
- implement management practices that result in a high level of strategic input and accuracy
- manage data acquisition from within and external to the organisation
- demonstrate conceptual and strategic problem solving
- comply with relevant legislative and regulatory requirements, standards and codes of practice.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- appropriate sector of the building and construction industry and conditions of the contracts upon which its activities are based:
 - contract clauses and intentions
 - dispute resolution
 - general conditions of contract
 - legislative and regulatory requirements
 - liabilities
 - parties' obligations under contracts
- factors to be considered in assessing the risk inherent in different types of building and construction projects
- conducting risk analysis:
 - analysis and revision of data
 - critical incident analysis and reporting
 - proposing solutions and recovery scenarios

- risk management practices
- scheduling and planning for contingencies
- financial and business administration principles commensurate with organisation's needs
- human resource processes:
 - accuracy and legitimacy of the tender process
 - management of material costs and availability
 - management of work practices, discipline and performance appraisal
 - staff selection and training in tender functions
- industry's industrial relations climate and practices:
 - costing methods and calculating standard time for activities
 - subcontractor contractual arrangements
 - independent workplace agreements
 - employment conditions
 - enterprise agreements
- relevant state or territory building and construction codes, standards and regulations
- socioeconomic and political factors which determine the climate in that sector of the building and construction industry.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- current and relevant government building, industrial relations, privacy, consumer protection legislation, regulations, codes and standards
- technology, applications and software systems for accessing, researching, extracting, analysing and presenting information, interpreting data and developing tender and associated documentation
- copies of appropriate awards and workplace agreements
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6006 Manage the procurement and acquisition of resources for building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6006A Manage the procurement and acquisition of resources for building or construction projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to establish and strategically manage the resource procurement process. It includes the evaluation and moderation of practices, resulting in generating appropriate information and activities to support and maintain the timely provision of supplies, equipment and people to residential and commercial projects.

This unit of competency applies to builders, project managers and related construction industry professionals who apply their knowledge and skills in contexts that are subject to change and demonstrate autonomy and judgement in their area of responsibility.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 | Direct the resource acquisition process. | 1.1 | Manage organisational strategic resource procurement and acquisition processes. |
| | | 1.2 | Inform staff members responsible for procurement and acquisition of resources of organisational resource requirements. |
| | | 1.3 | Apply financial and business principles to the resource acquisition process. |
| 2 | Maintain financial and administrative control over the resource acquisition process. | 2.1 | Monitor the effectiveness of the financial and administrative systems and controls through which resources are procured and acquired. |
| | | 2.2 | Exercise financial and corporate responsibility over maintenance of the procurement and acquisition system. |
| | | 2.3 | Evaluate procurement reports in preparation for management team meetings. |
| | | 2.4 | Prepare schedules of staff duties for setting up of each site. |
| | | 2.5 | Allocate staff to specific tasks within the procurement process. |
| | | 2.6 | Facilitate and conduct regular meetings between team members and the client to report on progress. |
| 3 | Manage industrial relations matters. | 3.1 | Monitor industrial relations practices within the building and construction industry to ensure compliance. |
| | | 3.2 | Address and resolve industrial relations disputes emanating from either the supply or delivery of physical resources in accordance with organisational policy. |
| | | 3.3 | Maintain industrial relationships between the organisation's personnel, subcontractors and other workers. |
| 4 | Evaluate the procurement and acquisition process. | 4.1 | Develop and manage procurement process evaluation and moderation systems in accordance with company policy. |

- 4.2 Address and resolve industrial relations disputes from the supply or delivery of physical resources.
 - 4.3 Initiate and monitor evaluations of the resource procurement system and related processes to identify possible system improvements.
 - 4.4 Gather and evaluate strategic information relating to the procurement or acquisition of resources.
 - 4.5 Evaluate reports on trends in costs and quality of the resources provided to organisational worksites by suppliers.
 - 4.6 Scrutinise and evaluate orders for resources using approved company documentation and procedures to ensure compliance.
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- 5 Administer the provision and withdrawal of resources from site.
 - 5.1 Establish and maintain systems for the effective supply and withdrawal of resources from sites.
 - 5.2 Manage strategic information on the usage and movement of resources on site.
 - 5.3 Establish and maintain communications principles and policies between on-site personnel and providers of physical resources.
 - 5.4 Obtain and monitor feedback from sites at commencement, during and on completion of the project.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - address and resolve disputes
 - facilitate meetings
 - direct the activities of personnel
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and data to analyse for management purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6006A Manage the procurement and acquisition of resources for building or construction projects.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6006 Manage the procurement and acquisition of resources for building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6006A Manage the procurement and acquisition of resources for building or construction projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by managing the procurement and acquisition of resources for at least one building and construction project.

In doing this, the candidate must:

- strategically focus on the procurement process and system to handle activities on more than one site
- overcome obstacles to procurement of human and physical resources to maintain project scheduled timeframes
- effectively deal with delays
- develop resource supply schedules and prioritise events, allowing for possible contingencies
- evaluate the system and recommend and implement remedial or improvement-based changes
- communicate information, including work health and safety (WHS) regulations applicable to the workplace.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building and construction industry contracts
- factors that contribute to the provision of physical and human resources in a construction environment
- financial and business principles as they apply to the building and construction industry:
 - accountability and integrity
 - accurate and timely development and maintenance of financial records
 - compliance with all legal and financial obligations

- probity and honest dealing
- transparency of financial processes
- financial and administrative controls over the procurement process:
 - agreements with subcontractors and material suppliers
 - authorising payment for services provided
 - generation of procurement documentation
 - managing the raising of purchase orders
- human resource and industrial relations practices within the building and construction industry:
 - associations and industrial relationships between the organisation and subcontractors
 - associations and industrial relationships between the organisation and material suppliers
 - dispute resolution between on-site personnel involved in the procurement process
 - dispute resolution involving disagreements between the organisation and subcontractors
 - engaging on-site labour
 - negotiating payments under awards, agreements and workplace agreements
 - proactive communication and incident avoidance
- relevant building and construction codes, standards and regulations
- organisational strategic and operational activities and the mechanisms through which they are addressed.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government construction legislation, regulations, codes and standards
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- copies of appropriate awards and workplace agreements
- business equipment, technology, applications and software systems for accessing, researching, extracting, analysing and presenting information, tracking and monitoring orders, deliveries and invoices and developing documents and reports.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6007 Develop, plan and implement building and construction environmental management processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6007A Develop, plan and implement appropriate building or construction environmental management practices and processes. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to develop, plan and implement systems designed to manage environmental practices and processes in either residential or commercial projects.

It includes establishing soundly based environmental management systems and strategic problem solving necessary to produce environmental outcomes that meet the legislative requirements of statutory authorities.

This unit of competency applies to builders, project managers and related construction industry professionals who use their technical and communication skills to analyse, plan, design and evaluate approaches to unpredictable problems and are responsible for managing environmental practices and processes on building or construction projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Identify environmental management plan factors. | 1.1 Identify and quantify strategic factors impacting on the organisation's compliance with environmental obligations. |
| | 1.2 Quantify range and scope of activities being undertaken by the organisation within environmental guidelines and obligations. |
| | 1.3 Identify and maintain knowledge of environmental issues from information in government publications. |
| | 1.4 Qualify and measure strategic and operational factors impinging on organisational environmental management processes. |
| 2 Establish and implement the organisational environmental management system. | 2.1 Direct and manage design and development of the organisational environmental planning system. |
| | 2.2 Develop criteria for implementing and maintaining environmental management systems for construction sites. |
| | 2.3 Develop methods to gather and monitor environmental management information essential to the construction process. |
| | 2.4 Evaluate environmental management processes regularly to ensure accuracy and compliance with policy. |
| 3 Establish and implement an environment management control system. | 3.1 Manage environmental control system quality in accordance with sound management principles and practices. |
| | 3.2 Introduce methods for determining effectiveness of the major elements of the environmental management control system. |
| | 3.3 Train and manage staff to ensure that quality assurance practices are applied to the environmental management process on a daily basis. |

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| | 3.4 | Conduct routine monitoring of environmental benchmarks. |
| 4 Facilitate the introduction of systems to manage organisational environmental management. | 4.1 | Develop and introduce organisational policies and procedures for environmental management. |
| | 4.2 | Document policies and routines for future reference. |
| | 4.3 | Circulate policy guidelines and obligations within the organisation and obtain sign-off by staff, employees and contractors. |
| | 4.4 | Monitor compliance of staff with environmental policy. |
| 5 Implement an environmental conformance feedback system. | 5.1 | Develop and introduce processes to monitor and report on environmental issues and procedures. |
| | 5.2 | Develop, circulate and maintain feedback systems to ensure all stakeholders can support the environmental management process. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- writing skills to:
 - develop clear environmental management policies, procedures, guidelines and associated implementation and monitoring documentation
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and data to analyse for management purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6007A Develop, plan and implement appropriate building or construction environmental management practices and processes.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6007 Develop, plan and implement building and construction environmental management processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6007A Develop, plan and implement appropriate building or construction environmental management practices and processes. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing, implementing and maintaining an environmental management system for a building and construction organisation, or a specific project.

In doing this, the candidate must:

- develop an effective environmental conformance strategy
- develop identifiable roles and responsibilities for organisation personnel involved in the management control system
- implement management practices that result in a high level of conformance by the organisation to meet environmental obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- environmental issues that impact on the organisation and its practices
- legislative, regulatory and administrative obligations incumbent on the building and construction industry for environmental practices
- environment management control system quality principles and practices:
 - ensuring availability of appropriately qualified personnel to deal with environmental issues
 - maintenance of agreed expenditure for environmental management compliance
 - obtaining timely and relevant expert advice as required by the project
 - organisational compliance with appropriate legislation and regulations
 - periodic review of environmental management practices and processes
 - preventative maintenance of environmental management practices and processes

- public liabilities and exposure to risk
- risk management strategies and policies
- feedback systems
- financial and business administration principles commensurate with organisational needs
- factors to be considered in assessing the environmental risk inherent in different types of building and site utilisation projects
- key factors that influence decisions on environmental issues and decision making:
 - federal, state or territory environmental legislation
 - local authority by-laws, Acts or regulations concerning environmental issues
 - location and nature of the construction activity
 - cope of operations and activities of the organisation
 - types of licences and permits held or needing to be held by the organisation.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant national construction and environmental legislation, regulations, codes and standards
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment, technology, applications and software systems for accessing, researching, extracting, analysing and presenting information, securely storing documents and records, and developing documents and reports.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6008 Develop and implement an estimating and tendering system

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6008A Develop and implement an appropriate estimating and tendering system. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to develop and implement an appropriate estimating and tendering system. It includes the facilitation and maintenance of an estimating and tendering system in a building and construction organisation involved in residential and/or commercial projects and the establishment of the human resources and facilities necessary to produce accurate and successful tenders in accordance with contractual guidelines.

This unit of competency applies to builders and senior managers within larger building, construction and services organisations who are responsible for managing estimating and tendering systems on complex residential or commercial projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Identify tendering system inclusions.	1.1 Quantify and qualify strategic economic and social factors impacting on the organisation. 1.2 Quantify and qualify range and scope of the organisation's activities and their impact. 1.3 Review and qualify strategic operational and financial structures within the organisation and its information needs.
2 Establish and implement an organisational tendering system.	2.1 Facilitate and implement design and development of the organisational estimating and tendering system in accordance with legislative and organisational requirements. 2.2 Establish and disseminate strategic criteria for personnel and processes concerned with estimating and tendering. 2.3 Obtain endorsement of senior management for implementation of the system. 2.4 Appoint staff with the necessary expertise and industry knowledge to excel at the tasks involved.
3 Establish and implement a tendering quality control system.	3.1 Identify and apply appropriate financial structures which underpin the tendering process. 3.2 Facilitate and implement review and feedback system using organisation project records and performance criteria.
4 Develop and implement a client feedback system.	4.1 Establish and implement a communication system to enable effective contact with clients. 4.2 Plan and strategically implement a client feedback system based on price, performance, progress and other strategic factors.
5 Establish a recording	5.1 Design and implement a tender recording system which meets organisational needs for ongoing evaluation of

and evaluation system.

tender performance.

- 5.2 Develop and implement strategic balances and checks which enable the ongoing maintenance of quality of the estimating and tendering system.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and complex data to analyse for strategic purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6008A Develop and implement an appropriate estimating and tendering system.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6008 Develop and implement an estimating and tendering system

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6008A Develop and implement an appropriate estimating and tendering system. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing and implementing an effective estimating and tendering system for a building and construction organisation appropriate to the organisation's business activities.

In doing this, the candidate must:

- comply with building, financial and industrial relations legislation, regulations, codes and standards
- develop conceptual and strategic problem-solving systems
- implement management practices which result in high level of staff productivity
- interact effectively with internal and external stakeholders.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the appropriate building and construction industry sector and the nature of the contracts upon which its activities are based
- relevant state or territory building and construction codes, standards and regulations
- factors to be considered in assessing the risk inherent in different types of building and construction projects
- financial and business administration principles commensurate with organisational needs:
 - identifying and interpreting strategic information relating to financial viability
 - accounting methods and systems
 - calculating and apportioning of overheads and margins
 - subcontracting and organisational contracting rates
- human resource practices and the industry's industrial relations climate and practices
- socioeconomic and political factors which determine the climate in that sector of the building and construction industry
- factors impacting on the tender process:

- legislative and regulatory requirements and codes of practice
- market rates, trends and technological improvements and variations
- materials and labour cost determination
- range of contracts employed by the organisation
- standard organisational documentation.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current relevant legislation, codes and standards
- construction and subcontractor contracts
- organisational policies and procedures, including workplace safety requirements
- financial and tendering legislation, codes, standards and guidance information
- business equipment, technology, applications and software systems for accessing, researching, extracting and interpreting data, calculating costs, analysing and presenting information and developing documents and reports.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6009 Develop, plan and implement a building and construction planning process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6009A Develop, plan and implement an appropriate building or construction planning process. Change of title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to develop, plan and implement a building and construction planning process. It includes the establishment of a construction planning system necessary to produce accurate and successful project outcomes in accordance with organisational guidelines and legislation, codes and standards governing project completion.

The unit of competency applies to the construction planning process of large organisations involved in residential and/or commercial projects of significant size and complexity.

This unit of competency applies to builders and senior managers responsible for managing staff and system performance and monitoring and reviewing planning systems within large building, construction and services organisations.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify factors for inclusion in the planning system.	1.1 Identify and quantify strategic factors impacting on the planning process in accordance with legislative, code, standard and organisational requirements. 1.2 Quantify range and scope of activities to be undertaken by the organisation. 1.3 Review and qualify strategic and operational planning structures and their information and data needs.
2 Establish and implement organisational construction planning system.	2.1 Facilitate design and development of the organisational construction project planning system. 2.2 Establish criteria for personnel and processes concerned with construction planning. 2.3 Facilitate and obtain endorsement of senior management for implementation of the system. 2.4 Select and appoint senior project staff to meet organisational needs.
3 Establish a planning quality control system.	3.1 Identify and apply construction methodologies applicable to the type of construction project to the planning quality control process. 3.2 Facilitate and direct the implementation of a review and feedback system using company project records and performance criteria.
4 Develop an organisational feedback system.	4.1 Establish and implement a means of effectively communicating planning information within the strategic and operational sectors of the organisation. 4.2 Develop and strategically implement an organisational feedback system based on performance, progress and project outcomes and other strategic factors.

- 5 Establish a recording and evaluation system.
- 5.1 Institute and manage a documentation and recording system that meets organisational needs for ongoing recording and evaluation of the planning process.
- 5.2 Develop and apply strategic balances and checks, which enable the ongoing maintenance of the quality of the planning system.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools, devices and programs to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and complex data to analyse for strategic purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6009A Develop, plan and implement an appropriate building or construction planning process.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6009 Develop, plan and implement a building and construction planning process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6009A Develop, plan and implement an appropriate building or construction planning process. Change of title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing and implementing a building and construction planning process for the organisation, commensurate with the business activities of the organisation.

In doing this, the candidate must:

- develop a strategic focus on the mechanisms implemented to enable the construction planning process
- interpret organisational information and reporting requirements, which results in the establishment of mechanisms that demonstrate those needs are being met
- implement and maintain mechanisms and systems which enable demonstrable improvements to occur within the organisational construction planning process
- delegate effectively and oversee tasks
- communicate effectively both verbally and in writing with owners, senior management and employees.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- financial and business principles as they apply to the building and construction industry
- human resource and industrial relations practices within the building and construction industry:
 - appropriate experience and qualifications of workers
- organisational strategic and operational activities and mechanisms through which they are addressed:
 - correct and timely selection of key project supervisors and administrators
 - effective lines and methods of communication
 - suitability and timing of communication
 - suitability of documentation and reporting methods

- suitability of work habits and timeliness of personnel
- relevant state or territory building and construction codes, standards and regulations
- the National Construction Code (NCC)
- socioeconomic and political factors which impact on the building and construction industry
- type, breadth and scope of building and construction industry contracts
- organisational quality assurance and policies and procedures
- planning quality control process:
 - documentation and graphical representation of data
 - establishment of performance benchmarks
 - evaluation and review methods and practices
 - feedback loops and information extraction
 - personnel and system information gathering and insert points
 - project review meetings and project progress reporting
- strategic factors that impact on the planning process:
 - clients and client needs
 - location of projects
 - logistics and location of personnel
 - market focus and structure of the organisation
 - organisation information needs and timelines
 - relevant legislative requirements, codes and standards
 - strategic organisational objectives
 - type of work being undertaken
- recording and evaluation systems that meet the organisation's needs:
 - key point data availability and crisis flagging
 - maintenance and redevelopment of information recording systems
 - manual and electronic data recording processes
 - performance data entry and responsibility
 - programmed and crisis evaluation strategies.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- government building legislation, codes and standards

- project plans, specifications and manufacturer's product and material specifications and installation instructions
- organisational policies and procedures including workplace safety requirements
- business equipment, technology and software to access information and data, run costing programs, secure and store documentation and records, and produce and share documentation to facilitate the development and implementation of a building and construction planning process.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6010 Plan, develop and implement building and construction energy conservation and management processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6010A Plan, develop and implement building or construction energy conservation and management practices and processes. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to develop, plan and implement practices and processes concerning energy conservation and management practices of organisations involved in either residential or commercial projects. It includes the establishment of management strategies focused on reducing energy waste through greater awareness and the implementation of practices which result in savings both within and external to the organisation.

This unit of competency applies to builders, project managers and related construction industry professionals who take responsibility for their own output when managing conservation practices and processes on construction projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|--|-----|---|
| 1 | Develop strategies for management of energy conservation. | 1.1 | Quantify and qualify factors to be included in the organisational energy conservation and management system. |
| | | 1.2 | Evaluate strategic factors that impact on the organisation's ability to improve energy conservation and management practices and processes. |
| | | 1.3 | Quantify range and scope of activities being undertaken by the organisation in regard to energy conservation and management. |
| | | 1.4 | Evaluate previous policies and operational factors contributing to energy conservation and management. |
| | | 1.5 | Develop organisational energy conservation and management policy and strategy, with assessment of savings and benefits to be derived. |
| 2 | Scope the energy conservation management principles and processes. | 2.1 | Consult board and senior management concerning the introduction and implementation of the energy conservation and management policy and strategy. |
| | | 2.2 | Develop organisational policy and management guidelines covering energy conservation and management within and external to the organisation. |
| | | 2.3 | Develop and document strategic plans for the introduction of the policy and strategy. |
| | | 2.4 | Brief staff on criteria for implementing and maintaining systems concerned with energy conservation and management. |
| | | 2.5 | Develop methods to gather and monitor energy conservation and management information essential to the management process. |
| | | 2.6 | Develop methods to translate the policy into on-site and organisational practices. |

- | | | |
|--|-----|---|
| 3 Implement the energy conservation and management system. | 3.1 | Build energy conservation and management instructions into organisational operating procedures. |
| | 3.2 | Introduce a staff training program to ensure that energy conservation and management practices are applied to organisational activities on a daily basis. |
| | 3.3 | Introduce methods for determining effectiveness of the energy conservation and management system. |
| | 3.4 | Establish and maintain routine monitoring of energy benchmarks. |
| 4 Manage the organisational energy conservation processes. | 4.1 | Add energy conservation and management issues to the process agenda at all levels of the organisation. |
| | 4.2 | Advise contractors and employees of the framework and monitor their performance within the framework. |
| | 4.3 | Circulate policy guidelines and obligations within the organisation and obtain sign-off by staff, employees and contractors. |
| | 4.4 | Monitor staff compliance with energy conservation and management policy. |
| 5 Implement an energy management feedback system. | 5.1 | Develop and introduce processes to monitor and report on energy conservation and management achievements. |
| | 5.2 | Develop, circulate and maintain feedback systems to ensure all stakeholders can support the energy conservation and management process. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - explain technical concepts and explore solutions to complex energy and conservation management issues
 - brief and train staff, and consult with board members and senior management
- technology skills to:

- use digital tools and devices to communicate and collaborate effectively with others
- use equipment and programs to access, extract information and complex data to analyse for strategic purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6010A Plan, develop and implement building or construction energy conservation and management practices and processes.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6010 Plan, develop and implement building and construction energy conservation and management processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6010A Plan, develop and implement building or construction energy conservation and management practices and processes. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing, implementing and maintaining an energy conservation and management system for a building and construction organisation.

In doing this, the candidate must:

- contribute to creating an energy conservation culture and an energy conservation management strategy which result in compliance with environmental guidelines and organisational objectives
- establish identifiable roles and responsibilities for organisation personnel involved in the strategy
- communicate verbally and in writing with senior management, employees, clients, regulatory authorities and legal representatives.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- operational issues and factors that may impact on energy conservation and practices:
 - public liabilities and exposure to risk
 - risk management strategies and policies
 - skills and experience of organisational personnel
 - structure of the management team and apportionment of responsibilities
 - timing of activities and project deadlines
 - types of materials and consumables being employed in the process
- energy conservation principles and practices:
 - qualified personnel to deal with energy issues

- expenditures for energy management compliance
- expert advice as required by the organisation or project
- compliance with appropriate legislation and regulations
- periodic review and preventative maintenance for energy conservation and management practices and processes
- financial and business administration principles commensurate with organisational needs
- key factors influencing decision making:
 - location and type of building/construction project
 - extent and types of equipment being operated
 - location and nature of the construction activity
 - organisational policy and practices
 - scope of operations and activities of an organisation
 - operational factors
- legislative, regulatory and administrative obligations incumbent on the building and construction industry for energy conservation and management practices.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant and current government building legislation, codes and standards
- environmental and sustainability legislation, regulations and guidelines
- project plans, specifications and manufacturer and supplier product and services specifications
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment and technology, applications and software to facilitate effective development, implementation and management of energy conservation management processes and practices.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6011 Establish systems to develop and monitor building and construction costs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6011A Establish systems to develop and monitor building and construction costs. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to establish systems to develop and monitor building and construction costs for residential or commercial projects. It includes implementing and maintaining a construction costing system and recording outcomes.

It includes establishing the human resources and facilities necessary to produce accurate and successful costing information and providing a basis for accurate estimating and tendering processes in accordance with organisational guidelines.

This unit of competency supports builders, project managers and related construction industry professionals who integrate information from a broad range of sources to develop systems and take responsibility establishing and managing construction costing systems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify factors for inclusion into the costing system.	1.1 Identify and quantify strategic factors impacting on the construction costing process. 1.2 Quantify range and scope of activities being undertaken by the organisation under the contract. 1.3 Qualify strategic and operational factors impinging on organisation costing processes and introduce measures to capture cost data.
2 Establish and implement organisational costing systems.	2.1 Direct and manage the design and development of an organisational project planning system. 2.2 Develop criteria for implementing and maintaining systems concerned with costing the construction process and formulate into active practice. 2.3 Develop methods to gather and monitor actual cost information essential to the construction costing process. 2.4 Obtain approval of the costing process from senior management. 2.5 Evaluate the costing process regularly to ensure accuracy and compliance with policy.
3 Establish and implement a costing quality control system.	3.1 Base quality control procedures on sound financial principles and practices. 3.2 Train staff to ensure that quality assurance practices are applied to the costing process on a daily basis. 3.3 Develop a system that allows reconciliation of invoices for progress payments against work completed, or due for completion, prior to payments being approved.
4 Develop and implement a costing feedback system.	4.1 Establish and implement a method to effectively and quickly communicate financial information concerning construction costs within the organisation.

- 4.2 Develop and maintain a review and feedback system using company project records and performance criteria to identify cost over-runs or savings within the contract.
 - 4.3 Plan and strategically implement a subcontractor feedback system, based on performance, progress and other strategic factors.
- 5 Establish recording and costing evaluation systems.
- 5.1 Institute a documentation and recording system to meet organisational needs for ongoing evaluation of the costing process.
 - 5.2 Apply strategic balances and checks that enable the ongoing maintenance of quality of the costing system.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools, devices and programs to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and complex data to analyse for strategic purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6011A Establish systems to develop and monitor building and construction costs.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6011 Establish systems to develop and monitor building and construction costs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6011A Establish systems to develop and monitor building and construction costs. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by developing and implementing a construction costing system for a building and construction organisation.

In doing this, the candidate must:

- incorporate monitoring processes to ensure continued financial viability of the organisation
- communicate effectively both verbally and in writing with senior management, employees, clients, regulatory authorities and legal representatives.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- appropriate sector of the building and construction industry and the nature of contracts upon which its activities are based
- factors to be considered in assessing the risk inherent in different types of building and construction projects
- financial and business administration principles commensurate with organisational processes:
 - establishing and maintaining accurate estimating practices
 - ability to gather specific information concerning actual versus estimated costs
 - relationships with financial management and construction management systems
- human resource practices and the industry's industrial relations climate and practices:
 - awards, agreements and work practices
 - entitlements, margins, allowances, rates and penalties
 - using the services of well-trained and experienced personnel
- socioeconomic and political factors which determine the climate in that sector of the building and construction industry

- quality assurance systems:
 - control procedures for maintaining costing
 - establishing performance benchmarks for system
 - monitoring internal expenditure and funding allocations
 - establishing and maintaining comprehensive records of bids
 - appropriate manual or electronic databases to assist performance comparisons
 - programmed and spontaneous reviews of success rates
 - providing secure and safe accommodation for costing information.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant and current government building, safety, environmental and industrial relations legislation, codes and standards
- project plans, specifications and manufacturer instructions
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- relevant financial and consumer protection legislation
- business equipment and technology, applications and software to facilitate establishing costing systems to monitor building and construction costs.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6012 Manage and administer development of documentation for building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6012A Manage and administer development of documentation for building or construction projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manage and administer the development of documentation for residential and/or commercial construction projects to produce accurate and successful project outcomes. It includes development of a quality document control and recording system.

It applies to those with a wide range of technical and management skills and knowledge to initiate alternative approaches to produce accurate and successful project outcomes in accordance with organisational guidelines.

This unit of competency applies to builders, project managers and related construction industry professionals responsible for coordinating and managing building or construction projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify factors for inclusion in organisational documentation.	1.1 Identify and quantify organisational administrative and operational structures and processes.
	1.2 Identify legal and financial obligations that must be reflected in and conformed to in the development of documentation for building and construction projects.
	1.3 Quantify range and scope of activities to be undertaken by the organisation and types of documentation and documentation processes required to support building and construction projects.
	1.4 Review and qualify documentation requirements of strategic operational and project structures within and external to the organisation.
2 Implement and manage documentation system.	2.1 Facilitate and manage the design and development of a documentation system for construction organisation.
	2.2 Establish operational criteria for personnel and processes concerned with construction and project documentation.
	2.3 Obtain endorsement from senior management for implementation of system.
	2.4 Appoint staff members with necessary expertise and industry knowledge to excel at the work involved.
3 Establish a construction documentation quality control system.	3.1 Identify and develop appropriate corporate guidelines for a construction documentation quality control system which underpins the development and maintenance of construction or project documentation.
	3.2 Establish and manage organisation rules for the accurate and timely completion of construction and project documentation.
	3.3 Produce documentation impinging on or requiring adherence to Acts, regulations or local authority requirements, that meets the necessary legal and or

financial obligations.

3.4 Implement and facilitate a review and feedback system using internal and external advice about the usability of company documentation.

4 Establish a recording and evaluation system. 4.1 Institute a documentation recording system which fosters ongoing evaluation of construction or project performance.

4.2 Apply strategic checks and balances which enable ongoing maintenance of the quality of construction and project documentation.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and complex data to analyse for strategic purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6012A Manage and administer development of documentation for building or construction projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6012 Manage and administer development of documentation for building and construction projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6012A Manage and administer development of documentation for building or construction projects. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by managing and administering the development of contractual, regulatory, financial and associated documentation for a building and construction project.

In doing this, the candidate must:

- manage practices that maintain confidentiality of information
- provide safe, secure and controlled access and storage of electronic and hard copy documents and records
- monitor documentation quality and manage documentation within an organisation's established documentation quality controls.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- appropriate sector of the building and construction industry and nature of the contracts upon which its activities are based
- processes, procedures and techniques of documentation development:
 - tenders, offers, contracts, drawings, specifications, schedules, materials list and variations
 - recording, tracking and security
 - quality control systems:
 - confidentiality in document handling
 - development by experienced personnel
 - limitations on document circulation, access and distribution
 - security in document filing, storage and identification

- factors to be considered in assessing the risk inherent in different types of building and construction projects
- financial and business administration principles commensurate with organisational needs
- human resource practices and the industry's industrial relations climate and practices
- legislative, regulatory and administrative obligations incumbent on the building and construction:
 - industry work health and safety (WHS)
 - environmental and sustainability requirements
 - employment and financial requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant and current government building, consumer protection, intellectual property, privacy and quality systems legislation, codes and standards
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- organisational templates and guidelines for documentation and control
- business equipment and technology, applications and software to facilitate managing and administering the development of documentation for building and construction projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6013 Evaluate concrete performance for multi-storey buildings

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor typographical error corrected in Foundation Skills.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCBC6013A Evaluate materials for multi-storey buildings. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to evaluate the performance of concrete for use in the construction of multi-storey buildings. It includes evaluating the properties and performance of concrete, impacts on concrete integrity and analysing the ability of concrete to withstand fire.

This unit of competency applies to builders, project managers and related construction industry professionals responsible for evaluating and considering a range of factors vital to ensuring the integrity of concrete used in the construction of commercial and residential multi-storey buildings.

This unit of competency is suitable for those who have a broad range of cognitive, technical and communication skills to identify, analyse, evaluate and synthesise information from a range of sources.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify and assess the application of concrete materials.	<p>1.1 Identify the application of concrete from project plans and confirm details and specifications for different building and construction types.</p> <p>1.2 Determine distribution methods of concrete following analysis of site access.</p> <p>1.3 Manage correct distribution and placement methods of concrete.</p> <p>1.4 Identify reasons and effects of compaction on both plastic and hardened concrete.</p> <p>1.5 Compare immersion, surface and form vibration.</p> <p>1.6 Maintain accurate records relating to the application of concrete.</p> <p>1.7 Identify and record types of curing methods and detrimental effects on concrete of poor or no curing.</p>
2 Assess the nature and performance of concrete.	<p>2.1 Identify and record plastic and hardened concrete properties for building types.</p> <p>2.2 List sources of aggregate and detail the properties of each.</p> <p>2.3 Describe and record effects of impurities in concrete.</p> <p>2.4 Conduct testing of concrete in accordance with relevant Australian Standards.</p>
3 Evaluate methods undertaken to repair concrete.	<p>3.1 Identify live and dormant cracks.</p> <p>3.2 Describe and record causes of cracked concrete, concrete cancer and repair methods.</p>

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| | 3.3 | Diagnose and record faults in concrete following organisational requirements. |
| 4 Evaluate effects of fire and heat on concrete. | 4.1 | Test reinforced concrete for effects of fire and heat. |
| | 4.2 | Determine and apply methods of fire protection for concrete elements. |
| | 4.3 | Establish that fire resistance and stability meet the Performance Requirements of the National Construction Code (NCC). |
| 5 Monitor environmental impacts of concrete. | 5.1 | Confirm compliance of concrete used in buildings with the organisation's sustainability policies. |
| | 5.2 | Monitor and apply new technologies in concrete in the construction of multi-storey buildings. |
| | 5.3 | Apply performance requirements of concrete in fire resistance construction in accordance with the NCC. |
| | 5.4 | Identify cost-effectiveness of using recycled materials in accordance with acceptable standard construction practices. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- writing skills to:
 - record information and maintain records
 - communicate non-compliant products
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and complex data to analyse for strategic purposes.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6013A Evaluate materials for multi-storey buildings.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6013 Evaluate concrete performance for multi-storey buildings

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor typographical error corrected in Foundation Skills.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6013A Evaluate materials for multi-storey buildings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by evaluating the nature and performance of concrete materials and products that form the structural components of a complex multi-storey building project.

In doing this, the candidate must:

- determine compliance with the National Construction Code (NCC)
- ensure the Performance Requirements within the NCC are satisfied.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- working drawings, details and specifications
- the NCC:
 - Performance Requirements
 - Performance Solutions
 - Deemed-to-Satisfy Solutions
 - Assessment Methods
- government building and construction legislation and regulations
- characteristics, applications and limitations of concrete:
 - alternative uses
 - cost effectiveness
 - hazard potential and environmental safety
 - installation requirements

- need for use of cranes and hoists
- recycling capacity
- rubbish removal demands
- transport problems and restrictions
- applications of structural principles in buildings
- building types:
 - bridge and pier construction
 - buildings with concrete skeleton and slabs
 - concrete column or wall 10 metres high
 - slab on ground floor
- design principles and behaviour of structural members undergoing stress, strain, compression, bending or combined actions
- work health and safety (WHS) Acts and regulations and workplace safety requirements
- type, nature and performance of concrete:
 - properties and uses of cement
 - reinforced concrete:
 - methods of pre-stressed concrete
 - principles of reinforced concrete using steel, wire, fibres, etc
 - types of curing methods:
 - accelerated curing
 - continuously wetting concrete
 - impermeable membrane curing
- records, including details of:
 - causes of surface defects during concrete placement
 - compaction of concrete
 - finishing processes and surface treatments to slab concrete.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- project working drawings, details and specifications
- government building and construction legislation
- current version of *AS 3600 Concrete structures* series of concrete standards
- the NCC

- concrete test results
- business equipment and technology to record sampling and testing data and to facilitate evaluation of concrete products for multi-storey buildings.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6014 Apply structural principles to the construction of large, high-rise and complex buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6014A Apply structural principles to the construction of large, high rise and complex buildings. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply structural principles to the construction of large, high-rise and complex buildings.

The design and construction of large buildings requires the input of a range of skilled professionals, including architects and engineers. Building and construction professionals require the ability to identify a range of factors that impact on structural principles within the building design and collaborate with other professionals to reach consensus.

This unit of competency applies to builders, project managers and related construction industry professionals responsible for ensuring the structural integrity of materials and building and construction work so that site safety and quality control measures are maintained during residential and commercial projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Apply structural principles to the planning of a construction project.	1.1 Identify main structural principles that apply to the construction of large, high-rise and complex structures.
	1.2 Identify, analyse and apply performance characteristics of structural elements.
	1.3 Apply the performance of materials in the building plan to the planning of the construction work.
2 Coordinate and manage the site assessment and job set-up.	2.1 Implement processes to analyse stability of soils and capacity of the site to support the construction loads.
	2.2 Identify and apply requirements for retaining walls to the planning process in conjunction with related industry professionals.
	2.3 Analyse and apply structural function and requirements for temporary structural elements to the planning process.
3 Coordinate and manage construction of footing systems.	3.1 Undertake coordination of the set-out of the building in accordance with documented building plans, following the full assessment of the site.
	3.2 Assess structural performance of the footings specified in the building plan for compliance with relevant codes and accepted industry construction structural principles.
	3.3 Lay footings, as specified in the building plan, and check for compliance with standards and accepted industry construction principles.
	3.4 Plan, implement and check damp coursing and the provision of termite barriers and other relevant techniques in accordance with codes, standards and industry practice.
4 Coordinate and manage structural	4.1 Identify and analyse technical construction principles and performance characteristics of construction materials in

elements of the construction process.		the planning of project.
	4.2	Identify, implement and check processes for construction of all structural elements for compliance with manufacturer specifications and relevant Australian Standards and codes.
	4.3	Identify and implement building plans and relevant standards to ensure appropriate allowances have been made for plumbing, electrical conduits and other services to be installed.
5 Analyse and plan for structural integrity of buildings.	5.1	Consult relevant industry professionals to provide advice regarding the structural integrity of proposed buildings.
	5.2	Assess structural requirements and loads of the building design.
	5.3	Conduct analysis of the effects of force and movements on structural elements.
	5.4	Conduct analysis of properties and behaviours of structural materials.
	5.5	Conduct analysis of section properties of structural elements using standard industry formulas and performance comparisons.
	5.6	Evaluate performance characteristics of columns using standard industry techniques.
	5.7	Assess methods used for stress distribution in connections between structural elements.
	5.8	Assess impact of various loads on the building structure.
	5.9	Consider design impact of high-performance structural elements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:

- consult effectively with industry professionals, and use relevant industry terminology and concepts
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6014A Apply structural principles to the construction of large, high rise and complex buildings.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6014 Apply structural principles to the construction of large, high-rise and complex buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6014A Apply structural principles to the construction of large, high rise and complex buildings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying structural design principles to the construction planning for a large, high-rise, or complex building project.

In doing this, the candidate must:

- coordinate professional input to evaluate structural integrity of large and complex buildings
- select, position and size all structural members that form fixed or temporary building structures
- clearly analyse structural impact of design decisions
- apply design principles relating to performance
- identify typical faults and problems and the action required to rectify such faults.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building legislation and regulation
- building codes, specifications and standards:
 - the National Construction Code (NCC)
 - Australian Standards
 - project specifications
- design principles and behaviour of structural members undergoing stress, strain, tension, compression, bending or combined actions
- structural design:
 - aesthetics
 - economy

- equilibrium
- functionality
- stability
- strength
- properties, characteristics and limitations of structural materials:
 - reinforced and pre-stressed concrete and tilt-up panels
 - composite steel and concrete
 - masonry
 - steel (cold-formed steel) and aluminium
- performance characteristics of columns analysis:
 - bending behaviour and performance of loaded support beams
 - eccentric and axial load effect
 - load spanning elements for bending moments, shear forces, deflection and torsion
 - effect of connections
 - effect of slab behaviour in relation to spans and stress distribution
 - effect of slenderness ratio
- high performance structural elements:
 - castellated beams
 - connections
 - fire resistance
 - laminated beams
 - pre-stressed beams
 - slabs
 - trusses
 - use of steel to reinforce concrete
 - waffle slabs
- application of structural principles in buildings:
 - dead and live load calculations and characteristics
 - fire resistance of materials
 - impact of thermal effects
 - impact of time-dependent effects, including creep and shrinkage
 - impact of wind, snow, groundwater, earthquake, liquid pressure, rainwater and earth pressure actions
 - structural resistance of forms of construction
 - structural resistance of materials
- project working drawings and specifications
- work health and safety (WHS) and organisational quality procedures and processes
- temporary structural elements:
 - bracing
 - close sheeting

- formwork props
- pressure resistant formwork
- scaffolding sole plates
- shields
- shoring collar sets
- soldier sets
- ties.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant current government building and construction and WHS legislation
- the NCC, and other relevant industry and Australian codes and standards
- environmental requirements and sustainability principles
- manufacturer's materials and product specifications and installation instructions for building materials in the project specifications
- project plans, design brief, working drawings and specifications.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6015 Apply building surveying procedures

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6015A Apply building surveying procedures. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to conduct assessments on the construction of buildings up to 25 metres in height with a total floor area less than 2,000 square metres, for compliance with relevant building codes, standards, performance requirements and design principles.

It also includes examining and reporting on the general condition of existing buildings and their compliance with building and land use standards.

This unit of competency applies to builders, project managers and related construction industry professionals responsible for ensuring buildings comply with relevant building legislation and codes for residential and commercial projects.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Review building approval documentation. | 1.1 Access and interpret project plans, specifications and engineering drawings for building. |
| | 1.2 Interpret and apply legislative requirements to various building projects. |
| | 1.3 Review submitted documents for building and land use approval for compliance with relevant legislation and codes. |
| | 1.4 Identify and record building non-compliances. |
| 2 Inspect building work. | 2.1 Monitor progress of construction work for compliance with standard construction practice and organisational quality assurance procedures. |
| | 2.2 Identify and record non-compliant work against the performance requirements. |
| | 2.3 Resolve issues in conjunction with industry professionals and manage remedial work. |
| | 2.4 Maintain ongoing communication with appropriate personnel to assist in monitoring compliant building work. |
| 3 Prepare reports on various building types. | 3.1 Prepare and report advice with respect to work on medium-rise buildings. |
| | 3.2 Document reports on suitability of existing buildings prior to purchase inspections. |
| | 3.3 Document records of building safety inspections conducted on existing buildings. |
| | 3.4 Document reports on construction work prior to occupancy inspection. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:

- use tools, devices and programs to communicate and collaborate effectively with others
- use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6015A Apply building surveying procedures.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6015 Apply building surveying procedures

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6015A Apply building surveying procedures. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting building inspections on two buildings: one during construction, and one an existing building.

Buildings must be up to 25 metres and not exceeding 2,000 square metres.

In doing this, the candidate must:

- confirm compliance with building codes and standards
- establish legal issues, permits and approvals are in place
- apply building survey procedures to assess all structural components that form a building project
- apply design concepts and principles.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government planning regulations
- building legislation, codes and standards
- the National Construction Code (NCC)
- project work drawings, details and specifications
- design principles and behaviour of structural members undergoing stress, strain, compression bending or combined actions
- performance requirements
- nature of materials and effects on performance.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must be provided with:

- government building legislation, codes and standards
- project working drawings, details and specifications
- the NCC
- business equipment, technology and software to facilitate applying building surveying procedures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6016 Assess construction faults in large building projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6016A Assess construction faults in large building projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to identify construction faults in large, high-rise and complex buildings and define the problem. It includes analysing faults, determining alternative options and methods and deciding on a reasonable and compliant solution.

It applies to builders and other related construction industry professionals who identify the root cause of construction faults, clarify key issues and establish processes to remediate faults.

This unit of competency supports builders, project managers and related construction industry professionals responsible for assessing construction faults, addressing complex construction problems and seeking advice from relevant experts to eliminate potential future implications.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Identify and analyse construction faults.	<p>1.1 Collect information relating to specific construction faults.</p> <p>1.2 Analyse original construction project plans and specifications to identify potential causes of construction problems.</p> <p>1.3 Document and communicate construction problems to relevant personnel following organisational work practices.</p> <p>1.4 Gather expert analysis and opinions as required from project team members and external professionals.</p> <p>1.5 Use problem-solving techniques to identify typical faults and problems.</p> <p>1.6 Develop a rectification action that meets the Performance Requirements of the National Construction Code (NCC).</p>
2 Analyse construction techniques, methods and materials.	<p>2.1 Use building terminology accurately in the communication of issues.</p> <p>2.2 Evaluate working drawings and specifications to identify any existing or designed-in construction problems.</p> <p>2.3 Prepare alternative methods and materials to meet the project specification objectives and comply with the NCC and relevant building legislation.</p>
3 Evaluate alternative construction solutions.	<p>3.1 Consider and evaluate commonly occurring on-site problems with building materials and their causes.</p> <p>3.2 Prepare reports identifying available alternative methods and materials available to meet the construction aims and objectives of the specifications.</p> <p>3.3 Prepare detailed sketches of available alternative methods and materials that meet the construction aims and objectives of the specification.</p>
4 Resolve construction	<p>4.1 Evaluate solutions and recommend suitable alternative</p>

faults using alternative construction methods.		methods to resolve the problem and meet project aims and objectives and organisational processes.
	4.2	Integrate selected methods into the project construction works to align with construction schedules and timeframes.
	4.3	Manage and monitor alternative forms of construction to ensure compliance.
5 Communicate preferred solution to construction problem.	5.1	Document technical resolution in detail of identified problem.
	5.2	Lodge appropriate documentation and communicate with appropriate project and other construction professionals.
	5.3	Determine and implement strategies to monitor corrective action processes and procedures.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6016A Assess construction faults in large building projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6016 Assess construction faults in large building projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6016A Assess construction faults in large building projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by identifying and assessing the impact of construction faults on a Type A building project.

In doing this, the candidate must identify, assess the impact of and determine remedial action for construction faults associated with at least two of the following:

- structural
- installation
- refurbishment
- renovation
- restoration.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building legislation and regulation
- building codes and standards
- the National Construction Code (NCC)
- project drawings, details and specifications
- design principles and behaviour of structural members undergoing stress, strain, tension, compression, bending or combined actions
- nature of materials and effects on performance
- structural design:
 - aesthetics
 - economy
 - equilibrium
 - functionality

- stability
- strength
- properties, characteristics and limitations of structural materials:
 - reinforced and pre-stressed concrete and tilt-up panels
 - composite steel and concrete
 - masonry
 - steel (cold-formed steel) and aluminium
- performance characteristics of columns analysis:
 - bending behaviour and performance of loaded support beams
 - eccentric and axial load effect
 - load spanning elements for bending moments, shear forces, deflection and torsion
 - effect of connections
 - effect of slab behaviour in relation to spans and stress distribution
 - effect of slenderness ratio
- high performance structural elements:
 - castellated beams
 - connections
 - fire resistance
 - laminated beams
 - pre-stressed beams
 - slabs
 - trusses
 - use of steel to reinforce concrete
 - waffle slabs
- applications of structural principles in buildings:
 - dead and live load calculations and characteristics
 - fire resistance of materials
 - impact of thermal effects
 - impact of time-dependent effects, including creep and shrinkage
 - impact of wind, snow, groundwater, earthquake, liquid pressure, rainwater and earth pressure actions
 - structural resistance of forms of construction
 - structural resistance of materials
- work health and safety (WHS) and organisational quality procedures and processes
- temporary structural elements:
 - bracing
 - close sheeting
 - formwork props
 - pressure resistant formwork
 - scaffolding sole plates

- shields
- shoring collar sets
- soldier sets.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building legislation codes and standards
- environmental and sustainability requirements
- manufacturer specifications and installation instructions
- organisational policies, procedures and workplace safety requirements
- project plans and specifications
- business equipment, technology and software to assess and remediate construction faults in large building projects and collaborate effectively with external professionals.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6017 Evaluate services layout and connection methods for the planning of large building projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6017A Evaluate services layout and connection methods for the planning of large building projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to evaluate the layout of services and connection methods in large, high-rise and complex buildings that comply with government building requirements and the National Construction Code (NCC). It includes cold and hot water supply, sewerage layout, electric and electronic installation, mechanical ventilation and air conditioning, smoke alarms and fire preventative systems.

This unit of competency applies to builders and other related construction industry professionals and senior managers who determine and manage services installation and connection and resolve issues relating to the planning of services layout and solving related problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Evaluate layout of water supply for general and firefighting use.	<p>1.1 Identify, evaluate and record specified water supply layout and connection in project plans and specifications.</p> <p>1.2 Check water connection approvals and determine layout meets NCC performance requirements.</p> <p>1.3 Record installation of water services supplying fire hydrants, fire hose reels and fire sprinkler systems.</p> <p>1.4 Evaluate results of interconnected and non-return water tanks for fire services.</p> <p>1.5 Confirm plumbing systems for general water supply is detailed and compliant with the NCC.</p>
2 Evaluate layout of sewerage and drainage disposal methods.	<p>2.1 Check approval documentation from the sewerage and drainage authority for any conditions related to the project.</p> <p>2.2 Identify and evaluate planned sewerage layout and connect for compliance with NCC and authority requirements.</p> <p>2.3 Identify, evaluate and record connection methods of main drains to local authority sewers across open ground and within buildings for the whole site.</p> <p>2.4 Evaluate local authority requirements for disposal of sewerage from fixtures situated below the level of local authority sewer mains.</p> <p>2.5 Evaluate and document the design and installation of stormwater drainage systems.</p> <p>2.6 Evaluate and document methods for disposal of stormwater drainage systems.</p>
3 Evaluate mechanical services and ventilation layout and connection.	<p>3.1 Establish mechanical ventilation control methods and use correct terminology to state how ventilation, volume, velocity and content is controlled.</p> <p>3.2 Identify, evaluate and record methods of air distribution and smoke hazard management and ensure compliance with the NCC.</p>

- 3.3 Identify, evaluate and record functions, application and basic elements of air conditioning and mechanical ventilation for various occupancy types in buildings.
- 4 Select hot water systems.
 - 4.1 Identify and evaluate design factors, height of installation, area to be serviced, number of outlets and energy sources available to select appropriate hot water system.
 - 4.2 Evaluate and document operating principles of various types of hot water systems.
 - 4.3 Evaluate layout and connection for selected hot water system.
- 5 Evaluate natural and artificial lighting.
 - 5.1 Determine the intent of natural lighting and aim of design from plans and specifications.
 - 5.2 Identify luminance requirements and compare artificial lighting types and sources for various service situations to meet relevant codes and standards.
 - 5.3 Evaluate layout and connection methods for lighting systems from plans and specifications.
- 6 Evaluate firefighting and fire detection systems.
 - 6.1 Identify building classification and relevant authorities responsible for fire safety regulations and inspection.
 - 6.2 Identify and evaluate requirements for sprinkler systems, fire hydrants and fire hoses for compliance with the building classifications and codes.
 - 6.3 Identify and evaluate fire detection and alarm systems for compliance with the building classification and codes.
 - 6.4 Evaluate layout and connection of fire detection and firefighting systems.
- 7 Determine requirements for
 - 7.1 Identify electrical design and requirements for service connection from electrical supply authorities.

- | | | |
|---|-----|---|
| general electrical and electronic service installation. | 7.2 | Evaluate layout and connection for general electrical supply and electronic services. |
| | 7.3 | Identify design and evaluate layout and connection of emergency warning systems, emergency lighting and exit signage systems. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- writing skills to:
 - articulate evaluations and apply organisational and industry protocols in the preparation and provision of reports to appropriate bodies or individuals
 - document evaluations, methods and requirements.
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract and record information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6017A Evaluate services layout and connection methods for the planning of large building projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6017 Evaluate services layout and connection methods for the planning of large building projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6017A Evaluate services layout and connection methods for the planning of large building projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by evaluating the layout of services and connection methods for the planning of one large building project.

In doing this, the candidate must:

- establish the class of building and determine that layout and connection of services meet the requirements of the National Construction Code (NCC) and other relevant standards
- identify any non-compliances, determine solutions and seek advice from relevant professional expertise to meet compliance.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building and construction legislation
- the NCC:
 - evidence of suitability
- organisational quality assurance systems
- design concepts and principles in relation to service installations
- hot water system:
 - type of occupancy and area to be serviced
 - type of system
 - energy sources available
 - height of installation
- general electrical and electronic service systems:
 - cabling and equipment layout for data, lift controls, power supplies and telecommunications

- switchroom and substations for electrical supply and distribution
- emergency lighting and exit signage systems
- emergency warning and intercommunication systems
- fire stopping
- service systems safeguards
- service systems access for maintenance, repair and extension
- lighting system:
 - natural and artificial lighting
 - emergency and exit signage
 - terminology such as brightness, control of glare, installation of fire stopping, intensity, reflections, lifespan and locations for installation
- sewerage connections:
 - local authority sewerage drainage system
 - septic or bio-chemical treatment unit
 - graded or vertical discharge pipes
 - inspection shafts and overflow relief gullies (ORGs)
- stormwater:
 - design, installation and disposal
 - connection to local government water drains
 - use of soakage pits and on-site water detection systems
 - size, location and construction requirements for eaves and box gutters
- downpipes and underground or concealed piping
- water supply:
 - town supply
 - tank storage supply relative to public water supply and reservoir heights
 - single and two-stage pumping for multi-function and single function connected services
- mechanical ventilation and air conditioning:
 - air conditioning applications
 - air distribution, including mechanical ventilation requirements for enclosed car parks
 - air filtration, including air filters, ducting and main filter types
 - air intake systems
 - fire dampers
 - fume discharge systems
 - installation of fire stopping
 - smoke control and exhaust systems
 - warm water and cooling towers
- general services installation terminology, definitions and installation methods
- nature of materials and effect of performance
- processes for the interpretation of working drawings and specifications

- construction terminology relating to services installation
- research methods
- processes for the preparation of documentation
- workplace safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building legislation codes and standards
- the NCC
- environmental and sustainability requirements
- manufacturer specifications and installation instructions
- project plans, working drawings and specifications
- business equipment and technology, applications and software to facilitate effective evaluation of services layout and connection methods.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCBC6018 Manage processes for complying with legal obligations of a building and construction contractor

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6018A Manage processes for complying with legal obligations of a building or construction contractor. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manage the processes to ensure the legal obligations of a building and construction contractor involved in either residential and/or commercial contracting projects are fully met.

It involves managing relationships with advisors and ensuring that the organisation meets the requirements of licensing, work health and safety (WHS), welfare, workers compensation, taxation, insurance, fair trading and environmental legislation.

This unit of competency supports builders, project managers and related construction industry professionals responsible for ensuring the legal obligations of a contractor are met.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Determine contract compliance and licensing requirements.	<p>1.1 Evaluate the type of building contract and identify provisions of the contract, terms, conditions, inclusions and variations.</p> <p>1.2 Determine building contractor licensing and contract requirements and communicate to company employees to ensure contract and licensing requirements are met.</p> <p>1.3 Identify changes to licensing arrangements in a timely manner.</p> <p>1.4 Apply for and take necessary steps to obtain the necessary building or construction licenses.</p> <p>1.5 Advise staff of the consequences of non-compliance with relevant legal obligations and licensing requirements.</p>
2 Manage relationships on legal matters.	<p>2.1 Identify areas of contract requiring professional legal advice and introduce and manage processes to enable the organisation to obtain such legal advice.</p> <p>2.2 Introduce and manage systems through which legal interpretations of contract or tender documents may be obtained before submission.</p> <p>2.3 Establish and maintain mechanisms to improve communications and dialogue between the organisation and the client to facilitate conciliation.</p>
3 Administer organisation's obligations.	<p>3.1 Develop and manage administration systems that facilitate conforming with organisation's obligations and meeting WHS and welfare, workers' compensation, noise abatement and working hours' regulations.</p> <p>3.2 Maintain and manage records demonstrating organisational compliance with legal obligations.</p> <p>3.3 Establish and maintain administrative guidelines and facilities for the proper and secure storage of organisational legal documentation.</p>
4 Manage compliance	<p>4.1 Instigate and manage systems that support and maintain</p>

with government legislation.		organisational capacity to meet legal obligations with regard to insurance and taxation.
	4.2	Arrange appropriate training and instruction for personnel in matters relating to insurance and taxation and make them aware of their responsibilities.
5 Apply and manage consumer protection practices.	5.1	Develop and implement practices and policies which facilitate the organisation meeting its obligations to its clients, subcontractors and employees.
	5.2	Establish and enforce codes of conduct for all employees and subcontractors.
	5.3	Take remedial action where evidence of non-compliance with consumer protection principles is identified.
6 Manage compliance with environmental legislation.	6.1	Establish and manage mechanisms to gather information in relation to the organisational environmental management plan.
	6.2	Manage supply and removal of subcontract works and materials and constantly scrutinise to ensure compliance with environmental standards.
	6.3	Record changes to legislation or environmental requirements and alter organisational activities and systems to ensure ongoing compliance.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC6018A Manage processes for complying with legal obligations of a building or construction contractor.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCBC6018 Manage processes for complying with legal obligations of a building and construction contractor

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC6018A Manage processes for complying with legal obligations of a building or construction contractor. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by managing the processes to ensure the compliance of contractor's legal obligations for one building and construction project.

In doing this, the candidate must:

- develop policies, procedures and controls to ensure the contractor meets legal obligations
- manage the efficiency and performance of the contract management systems and individuals involved in the process
- investigate problems, symptoms and causes of non-compliance and recognise key issues and synthesise information to generate solutions.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government legislation and regulations relevant to building and construction contractors:
 - industrial relations
 - workers compensation and rehabilitation
 - taxation law
 - business and project insurance
 - consumer protection
- various types and nature of building and construction contracts appropriate to the building and construction industry
- factors to be considered in assessing the risk inherent in different types of building and construction projects
- financial and business administration principles commensurate with organisational needs
- human resource practices and the industry's industrial relations climate and practices

- legislative, regulatory, and administrative obligations incumbent on a building and construction contractor for licensing, work health and safety (WHS), welfare, workers compensation, noise abatement, working hours, taxation, insurance and fair work requirements
- environmental requirements
- Australian Business Licence and Information Service (ABLIS).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government legislation and regulations relating to building and construction contractors
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- building and construction contract for project
- environmental and sustainability requirements
- business equipment, technology, applications and software systems for accessing and researching legal obligations, extracting, analysing and interpreting information, and controlling access to and securely storing legal documentation and records.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB2001 Handle and prepare bricklaying and blocklaying materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB2001A Handle and prepare bricklaying and blocklaying materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely handle bricklaying and blocklaying materials using manual and mechanical means. It includes sorting, stacking and protecting onsite materials.

This unit applies to those who carry out preparatory bricklaying and blocklaying work on new or existing structures. It is suitable for people with basic skills and knowledge who undertake routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare for work
 - 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 1.2 Read and interpret bricklaying and blocklaying requirements from current plans, specifications and codes.
 - 1.3 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.4 Calculate brick and block quantities and materials required for the task.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of tools and equipment and report damage or faults to appropriate person.
 - 1.8 Check materials against the delivery docket and report damage and inconsistencies to supervisor.
- 2 Handle, sort and stack materials.
 - 2.1 Prepare work area for loading of materials.
 - 2.2 Identify method of handling and moving onsite materials.
 - 2.3 Follow job instructions to prepare, sort and handle materials.
 - 2.4 Apply safe and effective manual handling techniques when unloading, lifting, moving and loading materials.
 - 2.5 Position materials for ease of access and clear of walkways.
- 3 Mix bricklaying and blocklaying mortar.
 - 3.1 Set up, level and stabilise cement mixer.
 - 3.2 Conduct a pre-operation check on cement mixer.
 - 3.3 Mix mortar using correct ingredient ratios and process as instructed.
 - 3.4 Confirm the quality and consistency of the mortar with

relevant person.

- | | | | |
|---|-----------|-----|---|
| 4 | Clean up. | 4.1 | Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report damage or faults. |
| | | 4.3 | Store, secure and protect tools, equipment and materials following workplace procedures. |

Foundation Skills

Candidates require:

- oral communication skills to:
 - understand and follow spoken instructions
 - use suitable industry and workplace language
 - use questions to confirm instructions
- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB2001A Handle and prepare bricklaying and blocklaying materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCB2001 Handle and prepare bricklaying and blocklaying materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB2001A Handle and prepare bricklaying and blocklaying materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by preparing one bricklaying and one blocklaying project on ground level.

In doing this, the candidate must:

- use manual techniques to appropriately position a pallet of bricks and blocks to reflect the laying sequence of the project
- blend bricks and blocks from different pallets to achieve a balanced masonry finish
- produce consistent mortar mixes to a strength factor of M3 using the bucket gauging technique
- relocate a pallet of bricks using mechanical equipment
- stack bricks and blocks and load mortar boards on a raised platform.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- terminology relating to bricklaying and blocklaying
- relevant building and construction standards and codes
- environmental requirements for workplace processes and waste disposal
- characteristics, applications and limitations of specified materials for bricklaying and blocklaying:
 - clay bricks
 - solid and hollow blocks
 - pavers
 - refractory bricks and mortars
 - various natural and manufactured stone
 - aggregates, cement, lime, mortar additives
- processes and techniques for:

- laying bricks and blocks
- mixing mortar
- manual handling
- mechanical handling
- functional and operational features of plant, equipment and hand and power tools:
 - cement mixers
 - brick cutting saw
 - brick buggies
 - elevators
 - forklifts
 - materials hoists
 - pallet trolleys
 - scaffolds
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - exposure to silica
 - exposure to loud noise
 - electrical hazards and the use of earth leakage boxes.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB2002 Use bricklaying and blocklaying tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB2002A Use bricklaying and blocklaying tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely and effectively use bricklaying and blocklaying tools and equipment. It includes understanding the functional features and applying the operational requirements of tools and equipment.

The unit is suitable for people with basic skills and knowledge who undertake routine bricklaying and blocklaying tasks under the direction of more experienced workers on new or existing structures.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan the work.
 - 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 1.2 Read and interpret work plans and specifications.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Clarify job priorities and sequence tasks with others on site.

- 2 Prepare for work.
 - 2.1 Select plant, equipment and tools for the task.
 - 2.2 Identify any limitations of plant, equipment and tools from manufacturer's instructions.
 - 2.3 Check equipment and tools to ensure guards, guides, controls and switches are fitted and functional.
 - 2.4 Examine hoses for damage and check electrical leads and power tools are tagged.
 - 2.5 Inspect clamps, guides, and equipment used for holding and supporting materials during operation, for faults.
 - 2.6 Set aside, tag and report damaged equipment and tools.

- 3 Use plant, equipment and tools.
 - 3.1 Level and stabilise static equipment in appropriate location.
 - 3.2 Connect electrical tools to a residual current device (RCD).
 - 3.3 Use plant, equipment and tools safely and effectively and only for their intended purpose.
 - 3.4 Disconnect portable electrical equipment from source and place in a safe location when not in use.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental

requirements.

- 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
- 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB2002A Use bricklaying and blocklaying tools and equipment

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL2002 Use bricklaying and blocklaying tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL2002A Use bricklaying and blocklaying tools and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by assisting in at least one bricklaying or blocklaying project.

In doing this, the candidate must:

- conduct a pre-operation check on equipment
- set up and safely use the following tools and equipment:
 - wheelbarrow
 - hand brick grab to load the job
 - cement mixer to mix consistent mortar for the project
 - wet cut brick saw to cut bricks and blocks accurately to varying sizes and shapes
 - hand and power assisted tools and equipment appropriate for the project
- use hand tools to achieve three different joint finishes
- wear appropriate personal protective equipment:
 - hearing protection
 - mask or appropriate respirator for the cutting task/s.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- terminology relating to bricklaying and blocklaying tools and equipment
- basic construction terminology
- features and purpose of plans and specifications
- manufacturer's specifications and instructions for tools and equipment:
 - safety requirements during operation
 - location and purpose of parts
 - uses and limitations

- cleanliness and maintenance
- troubleshooting problems
- functional and operational features of plant, equipment and hand and power tools:
 - wheel barrow
 - spirit, pocket and water level
 - automatic and laser level
 - trowels and jointing tools
 - corner blocks and string lines
 - tingle plate
 - profiles and straight edges
 - bolster chisels
 - mash hammer/lump hammer
 - builder square and sliding bevels
 - power drills
 - battery operated tools
 - pallet trolleys
 - materials hoist
 - brick buggies
 - elevators
 - small petrol or diesel engines, compressors or mixers
 - forklifts
- the characteristics and application of specified materials for bricklaying and blocklaying
- processes and techniques for:
 - manual handling
 - mechanical handling
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - electrical safety
 - noise reduction
 - dust suppression
 - working at heights
 - exposure to silica
 - exposure to loud noise
- environmental requirements relating to workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3001 Lay paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3001A Lay paving. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to pave external areas. It includes laying pavers to varying grades, substrates and patterns.

This unit applies to those who carry out paving on new or existing residential or commercial sites. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read and interpret paving requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Calculate material quantities required for the task.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify underground services and potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report any damage or faults to relevant person.
 - 1.8 Check conformity of materials against the specifications and place materials ready for the work.
- 2 Set out for paving.
- 2.1 Identify sub-soil, substrate types and compaction requirements.
 - 2.2 Identify paver thickness and bed thickness and determine excavation depth.
 - 2.3 Set out paved area, levels, grades and finished height of pavers.
- 3 Prepare for paving
- 3.1 Excavate area to required depth, treat area for sub-soil drainage and dispose of spoil.
 - 3.2 Position and straighten screed rails.
 - 3.3 Spread, screed and compact bedding material to specified height.
 - 3.4 Grade surface evenly to avoid ponding.
- 4 Lay pavers
- 4.1 Determine specified pattern, starting point, and check measurements for parallel and square.
 - 4.2 Lay paving to specified pattern, cut segments and align joints.

- 4.3 Compact pavers as specified, grout joints and clean pavers.
 - 4.4 Finish perimeters of pavers as specified.
- 5 Clean up.
- 5.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- numeracy skills to:
 - use measurements and formulas to calculate material quantities
 - apply measurements to set heights and paver patterns
- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3001A Lay paving

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3001 Lay paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3001A Lay paving. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by laying two different paving patterns onto two separate areas.

In doing this, the candidate must:

- prepare and lay pavers to a specified design to an area of a minimum of 3.0 m x 2.4 m on a sand bed and fill joints with sand:
 - set out paved area and excavate for a sand bed
 - compact the substrate and sand bed using a plate compactor
- prepare and lay butter and joint clay paving bricks to an area of a minimum of 1.2 m x 1.4 m on a cement bed
- apply the appropriate paving processes for the two paved areas.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified paving products and materials:
 - bedding materials
 - clay bricks and pavers
 - concrete blocks and pavers
 - mortar and sand
 - paving materials
 - slate
 - stone segments
 - waterproofing materials
 - mortar ingredients and consistency
 - paver sealing products
- processes and techniques for:
 - setting out paver levels and heights
 - manual and mechanical excavation

- compacting subsoils, substrates and bedding
- laying paving in various patterns
- finishing paver surface evenly and free of water ponding
- controlling surface water runoff and subsoil drainage
- construction terminology relating to paving
- functional and operational features of plant, equipment and hand and power tools:
 - plate compactors
 - cement mixers
 - wet cut saws
 - battery operated tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - noise reduction
 - dust suppression
 - hazardous manual tasks
 - exposure to silica
 - exposure to loud noise
- standards and codes relating to laying pavers
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCL3002 Carry out masonry veneer construction

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCL3002A Carry out masonry veneer construction. Updated to meet the Standards for Training Packages 2012.
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Application

This unit specifies the skills and knowledge required to construct masonry veneer buildings and structures. It includes structural, non-structural components and finishing of masonry veneer construction.

This unit applies to people who work on masonry veneer construction on new or existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare for work.
 - 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 1.2 Read and interpret masonry veneer construction requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Calculate material quantities for the task.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report damage to relevant person.
 - 1.8 Check materials against the specifications and report non-conformities to relevant person.
- 2 Set out brickwork/blockwork.
 - 2.1 Set out and mark base brickwork/blockwork.
 - 2.2 Set out brickwork/blockwork gauge and bond.
 - 2.3 Set out and mark masonry veneer walls, load bearing brickwork, and corbelling.
- 3 Construct base brickwork/blockwork.
 - 3.1 Place materials ready for the work.
 - 3.2 Mix mortar to specified consistency.
 - 3.3 Locate, prepare and install damp proof course and weepholes.
- 4 Construct veneer walls.
 - 4.1 Check and ensure that structural frame is plumb and straight.
 - 4.2 Position and correctly fix wall ties to framework.
 - 4.3 Install specified lintels to openings.

- | | | |
|---|----------------------------------|---|
| | 4.4 | Install flashings to window and door openings. |
| | 4.5 | Construct brickwork/blockwork walls to eaves height. |
| | 4.6 | Construct veneer gable maintaining gauge, level, plumb and straightness. |
| | 4.7 | Locate and form control joints as specified. |
| | 4.8 | Cut and lay sill bricks to a line. |
| 5 | Rake/rule joints and clean face. | |
| | 5.1 | Clean cavities of mortar droppings and bridging. |
| | 5.2 | Rake or rule joints to specified profile and depth. |
| | 5.3 | Clean face of brickwork/blockwork to remove unwanted mortar. |
| 6 | Clean up. | |
| | 6.1 | Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements. |
| | 6.2 | Clean tools and equipment, check for serviceability and report damage or faults. |
| | 6.3 | Store and secure tools and equipment following workplace procedures. |

Foundation Skills

Candidates require:

- numeracy skills to:
 - use measurements and formulas to calculate materials
 - set out brick gauge and bond
- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3002A Carry out masonry veneer construction

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3002 Carry out masonry veneer construction

Modification History

Release 1	<p>This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.</p> <p>Supersedes and is equivalent to CPCCL3002A Carry out masonry veneer construction. Updated to meet the Standards for Training Packages 2012.</p>
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Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing a minimum of 2.1 m long and 2.0 m high section of a masonry veneer building.

In doing this, the candidate must:

- install weepholes, damp proof course; frame ties, lintels and loadbearing components, window and door frame, roof tie-downs and spread of fire requirements.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials for masonry veneer construction:
 - aggregates, cement and lime
 - mortar ingredients and consistency
 - clay and masonry bricks
- construction terminology relating to masonry veneer construction
- processes and techniques for masonry veneer construction:
 - incorporating suspended floor
 - on concrete slab on ground
 - vermin control and anti-termite measures
 - damp-proofing, flashing and ventilation
 - fire control and separation requirements
 - frame tying components
 - lintels and load bearing components
 - timber, steel and aluminium windows
 - timber and steel door frames

- gable and eaves construction
- brick bond patterns
- brick and block expansion and growth, control and articulation joints
- functional and operational features of plant, equipment and hand and power tools:
 - battery operated tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - work at heights
 - exposure to silica dust
 - exposure to loud noise
 - requirements to erect and dismantle restricted height scaffolds
- acceptable brickwork tolerances stated in Australian Standards and building codes
- fire resistance and stability
- key requirements of National Construction Code (NCC) relating to masonry veneer construction
- features of working drawing and specifications
- environmental requirements relating to workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3003 Carry out cavity brick construction

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3003A Carry out cavity brick construction. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct cavity brick buildings and structures. It includes installing moisture barriers, ventilation and roof tie downs.

This unit applies to bricklayers and blocklayers who work on new or existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read, interpret and apply cavity brick construction requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Use measurements and apply formulas to calculate material quantities.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.8 Check materials against the specifications and report non-conformities to relevant person.
- 2 Set out brickwork.
- 2.1 Set out and mark base brickwork.
 - 2.2 Set out brickwork gauge and bond.
 - 2.3 Set out load bearing brickwork.
 - 2.4 Set out door and window positions.
- 3 Construct base brickwork.
- 3.1 Mix mortar to specified consistency.
 - 3.2 Lay cavity brick base to set out marks.
 - 3.3 Locate and install damp-proofing, weepholes and ventilation for suspended floor construction.
- 4 Construct brick walls.
- 4.1 Construct brick walls straight, plumb and level.
 - 4.2 Fix wall ties to specified positions.
 - 4.3 Locate and build in standard height door jambs and window frames into cavity walls.

- 4.4 Install lintels and head flashings to openings.
 - 4.5 Construct gables and parapets maintaining line, level and plumb.
 - 4.6 Install roof tie down and lateral support into walls.
 - 4.7 Cut and lay sill bricks to a line as specified.
- 5 Rake or rule joints.
- 5.1 Rake or rule joints to specified profile and depth.
 - 5.2 Brush down face of brickwork to remove unwanted mortar prior to drying.
- 6 Clean up.
- 6.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 6.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 6.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3003A Carry out cavity brick construction

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3003 Carry out cavity brick construction

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3003A Carry out cavity brick construction. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing a 2.1 m long x 2.0 m high cavity brick wall which incorporates an internal and external corner.

In doing this, the candidate must:

- install damp proof course and ventilation
- install brick cavity wall ties, door jamb and window frame
- install lintels, loadbearing components and roof tie-downs
- construct parapets and install step flashing
- comply with relevant cavity brick standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- construction terminology relating to cavity brick construction
- characteristics, applications and limitations of specified materials for cavity brick construction:
 - clay bricks
 - aggregates, cement and lime
 - mortar ingredients and consistency
- processes and techniques for:
 - suspended floor construction
 - construction of cavity brick on slab construction
 - anti-termite measures
 - damp-proofing, flashing and ventilation
 - installing lintels and load bearing components
 - installing windows and doors
 - gable and eaves construction

- level flashing for parapets
- tie down methods and applications
- closing of cavities and capping systems
- fire control and separation requirements
- brick and block expansion and growth and control and articulation joints
- brick bond patterns
- functional and operational features of plant, equipment and hand and power tools:
 - battery operated tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust
 - exposure to loud noise
 - hazardous manual tasks
 - erecting and dismantling of scaffolds
- allowable brickwork tolerances stated in current and relevant Australian Standards and building codes
- fire control and separation codes and legislation
- key requirements of the National Construction Code (NCC) relevant to cavity brick construction
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3004 Construct masonry steps and stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3004A Construct masonry steps and stairs. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to calculate and construct masonry steps, stairs and wing walls using various masonry products.

This unit applies to bricklayers and blocklayers who set out and construct steps and stairs on new or existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read, interpret and apply masonry steps and stairs requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Calculate material quantities for the task.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.7 Check conformity of materials against the specifications, blend masonry products and place materials in preparation for the work.
- 2 Set out brickwork/blockwork.
- 2.1 Calculate the total rise and going of the flight of stairs.
 - 2.2 Calculate tread, riser sizes and slope relationship rule.
 - 2.3 Set out position of stairs on a prepared footing to comply with plans, specifications and Australian Standards.
 - 2.4 Set out parallel wing wall to maintain bond and gauge with treads and risers.
- 3 Lay steps and wing walls.
- 3.1 Mix mortar to consistency for job requirements.
 - 3.2 Construct base brickwork or blockwork accurately to set out marks.
 - 3.3 Lay stairs square and plumb to the specified bond.
 - 3.4 Construct parallel sloping wing wall to align with tread and riser bond and gauge.
 - 3.5 Finish joints to specified profile.
 - 3.6 Brush down face of brickwork/blockwork prior to drying to remove unwanted mortar.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- numeracy skills to:
 - use measurements and formulas to calculate quantities
 - apply geometry to stair calculations and set out
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others.
 -

Unit Mapping Information

Supersedes and is equivalent to CPCCB3004A Construct masonry steps and stairs

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3004 Construct masonry steps and stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3004A Construct masonry steps and stairs. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing two flights of stairs both with a parallel wing wall to one side.

In doing this, the candidate must construct:

- one flight with a minimum of three pre-cast concrete treads
- one flight with a minimum of three solid masonry treads
- all treads with a 3 mm slope for water run-off
- wing wall to match the slope of the stairs with symmetrically cut mitres and uniform joints
- both flights to comply with current and relevant Australian Standards, specifications and within the codes for brickwork tolerances.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- construction terminology relating to the construction of masonry steps and stairs:
 - total rise
 - total going
 - landing
 - nosing
 - wing wall
- current Australian Standards and codes for staircase construction:
 - min/max permitted riser size
 - min/max permitted tread size
 - slope calculation 2R + 1G rule
 - min height of a wing wall
 - max number of steps in one flight
 - step size tolerance ± 5 mm

- max permitted deviation from level (10 mm in 10 m, or max of 15 mm)
- max permitted bow of a masonry wall (+/- 5 mm)
- max lipping of materials (Max 2 mm)
- max/min permitted perpend joint size (Min size 5 mm, +/- 10 mm from specified size)
- max min permitted bed joint size (10 mm +/- 3 mm)
- vertical alignment of perpend joints (15 mm per 2 m height of wall, measured centre to centre)
- key features of National Construction Code (NCC) relevant to constructing masonry stairs and steps
- characteristics, applications and limitations of approved materials for step and stair construction
- brick bond patterns
- functional and operational features of plant, equipment and hand and power tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - hazardous manual handling
 - exposure to silica
 - exposure to loud noise
- features of working drawings and specification
- processes and techniques for:
 - masonry steps and stairs construction
 - applying geometry to stair calculations and set out
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3005 Lay masonry walls and corners

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3005A Lay masonry walls and corners. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct masonry walls and corners to different types and styles of buildings.

This unit applies to bricklayers and blocklayers who construct masonry walls and corners on new or existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read, interpret and apply wall and corner construction requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Calculate material quantities required for the task.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.8 Check conformity of materials against the specifications and place materials in preparation for the work.
- 2 Set or brickwork and blockwork.
- 2.1 Set out position of walls and corners.
 - 2.2 Set up and plumb corner profiles.
 - 2.3 Set out brickwork/blockwork to size using set out rod or brickies tape to manufacturer's coursing chart.
 - 2.4 Mix mortar to required quality and consistency.
- 3 Lay bricks or blocks
- 3.1 Lay base courses level to set out marks.
 - 3.2 Lay bricks or blocks using specified bond throughout the construction.
 - 3.3 Build corners plumb, maintaining bond and gauge.
 - 3.4 Rake or rule joints to specified profile and depth.
 - 3.5 Brush down face of brickwork/blockwork prior to drying to remove unwanted mortar
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental

requirements.

- 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
- 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- numeracy skills to:
 - use measurements and formulas to calculate quantities
 - determine and apply coursing chart measurements
- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3005A Lay masonry walls and corners

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3005 Lay masonry walls and corners

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3005A Lay masonry walls and corners. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by building one brick and one block wall to a minimum length of 2.3 m and a minimum height of 850 mm.

In doing this, the candidate must:

- construct both walls between a profile at one end and a hand built corner at the other
- incorporate an external and internal corner and a stopped end to both walls
- comply with allowable tolerances in Australian Standards and building codes for construction of both walls
- comply to the brickwork tolerances stated in the current Australian Standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- construction terminology relating to masonry wall and corner construction
- structural principles of loadbearing masonry walls
- building and construction regulations, codes and standards
- key features of National Construction Code (NCC) relating to laying masonry walls and corners
- brick and block expansion and growth, control and articulation joints
- characteristics, applications and limitations of specified materials for masonry wall and corner construction:
 - ingredients and additives to produce consistent mortar (M code)
 - acid for cleaning masonry work
- functional and operational features of plant, equipment and hand and power tools:
 - battery operated tools
- workplace safety:
 - hierarchy of control

- working at heights
- hazardous manual tasks
- exposure to silica
- exposure to loud noise
- features of working drawings and specifications
- fire control and separation codes and legislation
- processes and techniques for laying masonry walls and corners
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3006 Lay multi-thickness walls and piers

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3006A Lay multi-thickness walls and piers. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to lay multi-thickness walls and piers. It includes laying masonry walls in different brick bonds and laying engaged and isolated piers.

This unit applies to bricklayers and blocklayers who work on a new or existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read, interpret and apply multi-thickness wall and pier construction requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Use measurements and apply formulas to calculate material quantities.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.8 Check conformity of materials against the specifications and place materials in preparation for the work.
- 2 Set out brickwork.
- 2.1 Identify brick bond from plans and set out and mark position of brickwork on footing.
 - 2.2 Set out engaged and isolated piers to specified height and gauge.
- 3 Construct walls and piers.
- 3.1 Mix mortar quality and consistency to job requirements.
 - 3.2 Lay walls with engaged piers straight, level and plumb.
 - 3.3 Lay isolated piers square and plumb to the specified height maintaining gauge.
 - 3.4 Remove excess mortar prior to drying.
 - 3.5 Finish joints to specified profile and depth.
 - 3.6 Brush down and clean brickwork prior to mortar drying.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in following workplace and environmental requirements.

- 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
- 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3006A Lay multi-thickness walls and piers

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3006 Lay multi-thickness walls and piers

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3006A Lay multi-thickness walls and piers. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

- To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by laying three 230 mm thick brick walls, to a minimum height of 634 mm.

In doing this, the candidate must:

- lay one English bond wall to minimum length of 2100 mm with one 90° return external corner to the same height and a minimum length of 700 mm
- lay one Flemish bond wall to a minimum length of 1700 mm which incorporates a 590 mm (minimum) squint corner return; wall to be finished with a brick on edge capping finish with symmetrically mitred cuts over squint corner
- lay one wall in chosen bond (not stretcher) to a minimum length of 2100 mm with a 'T' junction with a minimum length of 600 mm
- engaged one pier to each wall at the same height of wall
- set out and lay one isolated pier in the same bond for each wall, to the set-out wall height
- comply to the brickwork tolerances stated in the current Australian Standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of approved materials used for multi-thickness walls and pier construction
- processes and techniques for:
 - multi-thickness brick and pier construction
 - installing specified reinforcing
 - laying bricks to specified bond to provide structural stability
 - damp-proofing, installing drainage pipes and weep holes
- construction terminology relating to multi-thickness wall and pier construction
- brick bond patterns:
 - Flemish
 - Flemish garden wall

- English bond
- English garden wall bond
- Monk bond
- Dutch
- 1/3 bond
- Stretcher
- functional and operational features of plant, equipment and hand and power tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - working at heights
 - hazardous manual tasks
 - dust suppression
 - exposure to silica
 - exposure to loud noise
- features of working drawings and specification
- relevant and current building, brick and block laying standards and codes
- key features of National Construction Code (NCC) relating to multi-thickness walls and piers
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3007 Install glass blockwork

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3007A Install glass blockwork.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install glass blocks into non-structural panels.

This unit applies to people who install fire rated or standard glass blocks using various fixing methods to new or existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read, interpret and apply glass block installation requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Use measurements and apply formulas to calculate material quantities.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.8 Check conformity of glass bricks, adhesives and accessories and place materials in preparation for the work.
- 2 Set out for installation.
- 2.1 Check opening size, lintel and flashing to suit glass block installation.
 - 2.2 Check base and head for level and abutting surfaces for plumb.
 - 2.3 Mix mortar to the correct consistency or use approved silicone product following manufacturer's instructions.
- 3 Install glass blocks.
- 3.1 Install expansion strips and reinforcements.
 - 3.2 Lay glass blocks level and plumb to the specified design.
 - 3.3 Remove excess mortar or silicone at completion and clean glass blocks.
 - 3.4 Use appropriate tool to achieve specified joint finish.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.

- 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
- 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3007A Install glass blockwork

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3007 Install glass blockwork

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3007A Install glass blockwork.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by installing a minimum of 1.44 square metres of glass blocks into frame.

In doing this, the candidate must:

- apply the appropriate glass block installation processes
- use both mortar or recommended adhesive
- fix reinforcement, expansion joint and grouting
- comply with glass block installation standards, codes and manufacturer's instructions.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials and components for glass block installation:
 - aluminium frames
 - reinforcement
 - manufacturer's silicone products
 - mortar mixture
 - grouts
 - fire rated glass blocks
- processes and techniques for installing various systems and ranges of glass bricks
- construction terminology relating to installation of glass bricks
- functional and operational features of plant, equipment and hand and power tools:
 - battery operated tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - working with hazardous substances

- working at heights
- exposure to silica
- exposure to loud noise
- relevant and current standards and building codes
- features of working drawings and specification
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3009 Install flashings and damp proof course

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3009A Install flashings and damp proof course. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to use various materials for flashings and damp proofing. It includes installing vertical and head flashing to windows and doors and stepped and tray flashing to parapets.

This unit applies to bricklayers or blocklayers who work on new and existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Prepare for work. | <p>1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.</p> <p>1.2 Read, interpret and apply flashing and damp proof course requirements from current plans, specifications and codes.</p> <p>1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.</p> <p>1.4 Use measurements and apply formulas to calculate material quantities.</p> <p>1.5 Determine job priorities and sequence job tasks in consultation with others on site.</p> <p>1.6 Identify potential hazards and determine and implement control measures.</p> <p>1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.</p> <p>1.8 Check conformity of materials against the specifications and place materials in preparation for the work.</p> |
| 2 Prepare material and surface. | <p>2.1 Inspect specified materials for defects, damage or non-compliance with specifications.</p> <p>2.2 Locate position of impervious material from plans and specifications.</p> <p>2.3 Prepare structure and surface to manufacturer's specifications.</p> <p>2.4 Measure and cut flashing material allowing for specified laps.</p> |
| 3 Install flashing and damp-proof course (DPC). | <p>3.1 Dress flashing and DPC materials in preparation for installation.</p> <p>3.2 Lay, lap and fit or build in flashings and DPC to prevent</p> |

- moisture movement and divert the travel of moisture.
- 3.3 Form and seal flashing and moisture barrier around openings.
 - 3.4 Finish any exposed flashing and moisture barrier.
 - 3.5 Locate and ensure weep holes are clean and functional.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3009A Install flashings and damp proof course

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3009 Install flashings and damp proof course

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCL3009A Install flashings and damp proof course. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by installing moisture barriers and fixing flashings to masonry construction to provide moisture movement and ensure the effective diversion of collected moisture.

In doing this, the candidate must:

- install damp proof course (DPC) in a cavity brick or masonry veneer construction, which includes internal and external corners
- install window and door head and stile flashings to a cavity brick or masonry veneer construction
- install stepped and tray flashing to a masonry wall at roof abutment or to a chimney at the roof line
- install flashing to a masonry parapet
- comply with flashing and damp proof course standards, codes and manufacturer's specifications.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials used for flashing and damp proofing:
 - aluminium sheeting
 - copper
 - bituminous sheeting
 - emulsions
 - lead and polyurethane sheeting

- polythene sheeting
- processes and techniques for:
 - damp-proofing to provide a barrier to moisture movement
 - flashing to divert the travel of moisture
 - stepped and level flashing for parapets and gables
 - dressing, fitting and building in various flashings
- construction terminology relating to flashing and damp proofing
- functional and operational features of plant, equipment and hand and power tools:
 - battery operated tools
- workplace safety:
 - working at heights
 - exposure to silica
 - exposure to loud noise
 - hazardous manual handling
 - hazardous materials
- current and relevant standards and building codes relating to flashings and DPC
- key requirements of the National Construction Code (NCC) relevant to installation of flashings and damp proof course
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCL3010 Construct masonry arches

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.
Changes to Performance Evidence.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCL3010A Construct masonry arches.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct various types of masonry arches within walls and above columns or attached piers.

This unit applies to bricklayers and blocklayers who construct masonry arches in new or existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Prepare for work.	<ul style="list-style-type: none">1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.1.2 Read, interpret and apply masonry arch construction requirements from current plans, specifications and codes.1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.1.4 Calculate material quantities required for the task.1.5 Determine job priorities and sequence job tasks in consultation with others on site.1.6 Identify potential hazards and determine and implement control measures.1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.1.8 Check conformity of materials against the specifications and place materials in preparation for the work.
2 Construct wall to springing line of arch.	<ul style="list-style-type: none">2.1 Set out location of first course and determine span of arch.2.2 Lay abutting walls maintaining plumb, gauge and level up to springing line to comply with Australian standards tolerances.
3 Set up arch template.	<ul style="list-style-type: none">3.1 Set out arch centre and curve and where appropriate produce a full-size drawing of arch.3.2 Transfer shape to template materials and cut to shape.3.3 Locate arch template to height of springing line and crown.

- 3.4 Adjust toms and wedges or adjustable metal props to ensure arch centre and springing line is level.
- 4 Cut and lay voussoirs.
 - 4.1 Use full size drawing to determine voussoir shape and size.
 - 4.2 Mark, cut and test voussoirs for parallel joints.
 - 4.3 Lay voussoirs around arch centre.
 - 4.4 Cut and lay spandrels maintaining even collar joints.
- 5 Clean up.
 - 5.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- numeracy skills to:
 - use measurements and formulas to calculate material quantities
 - apply geometry to arch set out
- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3010A Construct masonry arches

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3010 Construct masonry arches

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.
Changes to Performance Evidence.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCL3010A Construct masonry arches.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by:

- constructing a segmental arch using brick or block
- constructing three other brick or block arches from the following:
 - semicircular arch
 - multicentre arch
 - gothic arch
 - bull's eye arch.

In doing this, the candidate must:

- calculate and develop a full-scale template for a gothic arch
- carry out calculations to determine voussoir size and shape for a gauged arch
- build abutments to the specified height maintaining gauge and bond
- fit the arch centre allowing for ease of stripping on completion
- comply to the brickwork tolerances stated in the current Australian Standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials used for masonry arch construction
- processes and techniques for:
 - setting out and constructing various types of arches
 - preparing voussoirs for an arch
 - setting out, cutting, assembling and fitting arch templates
- categories and terminologies relating to arches
- structural and load bearing forces applied to arches
- features of working drawings and specifications
- mortar ingredients and consistency
- functional and operational features of plant, equipment, hand and power tools:
 - battery operated tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - working safely at heights
 - erecting and dismantling work platforms
 - exposure to silica
 - exposure to loud noise
- key requirements of the National Construction Code (NCC) relevant to masonry arch construction
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3011 Construct curved walls

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.
- Performance Criteria 3.6 updated.
 - Changes to Performance Evidence.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCB3011A Construct curved walls.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct masonry curved walls. It includes using geometry to calculate and set out curves.

This unit applies to bricklayers and blocklayers working on new and existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------------|--|
| 1 Prepare for work. | 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job. |
| | 1.2 Read, interpret and apply curved wall construction requirements from current plans, specifications, standards and codes. |
| | 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures. |
| | 1.4 Calculate material quantities required for the task. |
| | 1.5 Determine job priorities and sequence job tasks in consultation with others on site. |
| | 1.6 Identify potential hazards and determine and implement control measures. |
| | 1.7 Select and check condition of plant, equipment and tools and report damage or faults. |
| | 1.8 Check conformity of materials against the specifications and place materials in preparation for the work. |
| 2 Set out and lay curved wall. | 2.1 Identify wall shape from job drawings and calculate curve using geometry. |
| | 2.2 Locate and set out curved wall using a trammel. |
| | 2.3 Set out wall length and height maintaining brickwork gauge and bond. |
| | 2.4 Mix mortar quality and consistency to job specifications. |
| | 2.5 Lay first course level and in line with curve set out. |
| | 2.6 Lay wall maintaining gauge, bond and alignment with vertical face maintaining a constant 'V' shape perpendicular joint. |
| | 2.7 Remove excess mortar and rake or rule joints to specified |

- profile and depth.
- 2.8 Brush down face brickwork prior to mortar drying.
- 3 Set out and lay serpentine wall.
- 3.1 Identify wall shape from job drawings and calculate curves using geometry.
- 3.2 Locate and set out serpentine wall curves using trammel heads and trammel arm.
- 3.3 Set out length and height of wall maintaining brickwork gauge and bond.
- 3.4 Mark and cut required bricks to maintain equal perpendicular joints.
- 3.5 Lay bricks to curve set out maintaining bond, gauge and alignment with vertical face.
- 3.6 Remove excess mortar and finish jointing to meet the current Australian Standards.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
- 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
- 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- numeracy skills to:
 - calculate various curves using geometry
- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3011A Construct curved walls

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3011 Construct curved walls

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

- Performance Criteria 3.6 updated.
- Changes to Performance Evidence.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3011A Construct curved walls.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by setting out and laying two curved masonry walls to height of 600 mm.

In doing this, the candidate must:

- construct one serpentine masonry wall to a minimum length of 4.0 m using the plotted points or template method and finished with appropriate capping
- construct one curved masonry wall with a minimum rise of 290 mm and radius of 2.4 m using the trammel technique
- comply with brickwork tolerances stated in the current Australian Standards.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials used for curved wall construction
- processes and techniques for:
 - calculating and setting out various size curves
 - curved wall construction
- using measurements and formulas to calculate quantities
- facets generated by curved walls
- aspects and factors relating to curved walls

- construction terminology relating to curved wall construction
- wall types, movement of joints and bonding patterns
- functional and operational features of plant, equipment, hand and power tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - hazardous manual handling
 - exposure to silica
 - exposure to loud noise
- current and relevant Australian Standards relating to constructing curved walls
- key requirements of the National Construction Code (NCC) for constructing curved walls
- features of working drawings and specifications
- environmental and waste management requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3012 Construct fireplaces and chimneys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3012A Construct fireplaces and chimneys. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct brick fireplaces and chimneys in various types and styles of buildings.

This unit applies to bricklayers and blocklayers who work on new and existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare for work.
 - 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 1.2 Read, interpret and apply fireplace and chimney construction requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Use measurements and apply formulas to calculate material quantities.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Select appropriate plant, equipment and tools, check condition and report damage or faults to relevant person.
 - 1.7 Check conformity of materials against the specifications and place materials in preparation for the work.

- 2 Set out and construct base and hearth.
 - 2.1 Locate and set out fireplace base to specified size.
 - 2.2 Mix mortar to quality and consistency specifications.

- 2.3 Lay masonry base level, straight and plumb to the correct gauge and bond.
- 3 Construct firebox and inner hearth.
- 3.1 Set out the first course for fire box and jambs to specified dimensions.
- 3.2 Set out gathering/curve of fireback on floor.
- 3.3 Construct firebox maintaining gauge, level and plumb to allowable tolerances.
- 3.4 Form gather with corbelled brickwork to provide the specified throat size.
- 3.5 Install the lintel at the specified height to meet bearing rules and maintain bond.
- 4 Form smoke shelf and throat.
- 4.1 Form smoke shelf to the specified shape with mortar parging.
- 4.2 Cover finished smoke shelf to protect from damage during construction.

- 4.3 Check and alter throat size to meet the specified size.
- 5 Form smoke chamber.
- 5.1 Lay gathering over/corbellings to specified angle and correct bond.
- 5.2 Parge smoke chamber to minimum thickness to achieve a smooth mortar finish.
- 6 Construction flue.
- 6.1 Lay gathering with directional change to break the light.
- 6.2 Parge inside of flue.
- 7 Complete chimney stack.
- 7.1 Install lead chimney tray at the specified height.
- 7.2 Extend chimney square and plumb to finished height.

- 7.3 Lay chimney capping or sand cement flashing to prevent water intrusion.
 - 7.4 Finish joints to specified profile and depth.
 - 7.5 Clean excess mortar and brush down face work.
 - 7.6 Lay brickwork hearth and complete to meet Australian Standards.
-
- 8 Clean up.
 - 8.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 8.2 Clean tools and equipment, check for serviceability and report damage or faults
 - 8.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3012A Construct fire places and chimneys

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3012 Construct fireplaces and chimneys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3012A Construct fireplaces and chimneys. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing a fireplace and chimney for a single storey building.

In doing this, the candidate must:

- install chimney flashing
- install weather proof chimney capping
- comply with fireplace and chimney standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- terminology relating to fireplace and chimney construction
- current and relevant standards and building codes:
 - minimum and maximum dimensions for components
 - allowable tolerances
 - flashing requirements
- key requirements of the National Construction Code (NCC) relevant to fireplaces and chimneys
- characteristics, applications and limitations of specified materials and products for fireplace and chimney construction:
 - mortar specifications (M code)
 - parging ingredients
 - refractory bricks
- processes and techniques for fireplace and chimney construction:
 - brick bond patterns
 - roof flashing and weathering
- working drawing and specifications
- functional and operational features of plant, equipment and hand and power tools:

- power assisted tools
- workplace safety:
 - erecting and dismantling work platforms
 - working at heights
 - job safety and environmental analysis (JSEA)
 - exposure to silica
 - exposure to loud noise
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCL3013 Construct masonry structural systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

Change to Performance Criteria 4.1.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3013A Construct masonry structural systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct masonry load bearing walls and engaged piers.

This unit applies to bricklayers and blocklayers who work on new and existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Prepare for work.	<ul style="list-style-type: none">1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.1.2 Read, identify and apply masonry structural systems requirements from current plans, specifications, standards and codes.1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.1.4 Use measurements and apply formulas to calculate material quantities.1.5 Determine job priorities and sequence job tasks in consultation with others on site.1.6 Identify potential hazards and determine and implement control measures.1.7 Select and check condition of plant, equipment and tools and report damage or faults.1.8 Check conformity of materials against the specifications and place materials in preparation for the work.
2 Set out load bearing walls.	<ul style="list-style-type: none">2.1 Set out and mark masonry wall and engaged piers.2.2 Set out blockwork bond and gauge and the location of horizontal reinforcing and articulated joints.
3 Construct load bearing walls with engaged piers.	<ul style="list-style-type: none">3.1 Mix mortar to meet job requirements.3.2 Lay blocks to set out height between control joints, maintaining bond and centring starter bars.3.3 Install horizontal reinforcing to specified bed joints.3.4 Lay attached piers with reinforcing to set out height.3.5 Install and secure roof tie down, bracing and vertical support.3.6 Clean and prepare blockwork for formwork and core filling.

- | | | | |
|---|---------------------------------|-----|---|
| 4 | Clean and finish mortar joints. | 4.1 | Finish joints to specified profile and depth to meet current Australian Standards. |
| | | 4.2 | Brush down face of blockwork prior to drying to remove unwanted mortar. |
| 5 | Clean up. | 5.1 | Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements. |
| | | 5.2 | Clean tools and equipment, check for serviceability and report damage or faults. |
| | | 5.3 | Store and secure tools and equipment following workplace procedures. |

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3013A Construct masonry structural systems

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3013 Construct masonry structural systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.

Change to Performance Criteria 4.1.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3013A Construct masonry structural systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing a 2.1 m long x 2.0 m high load bearing block wall with one 390 mm x 390 mm engaged pier.

In doing this, the candidate must:

- install wall tie down and lateral reinforcing support system
- install a door jamb and bond beam lintel
- secure tie down for roof structures
- clean core in preparation for core filling
- comply with current masonry structural systems standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, application and limitation of approved materials for structural wall construction:
 - mortar ingredients and consistency
 - steel reinforcing and steel ties
- processes and techniques for structural wall construction:
 - methods of engaging piers
 - fixing of horizontal and vertical reinforcing
 - installing roof tie down systems
- construction terminology relating to structural wall construction
- brick and block expansion and growth, control and articulation joints

- functional and operational features of plant, equipment, hand and power tools
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - working at heights
 - exposure to silica
 - exposure to loud noise
- fire control and separation requirements
- key requirements of the National Construction Code (NCC) relevant to masonry structural systems
- features of working drawings and specification
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3014 Install fire-rated masonry construction

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3014A Install fire-rated masonry construction. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install fire-rated masonry construction. It includes laying fire resistant masonry to buildings, walls and service openings

This unit applies to bricklayers and block layers who work on new and existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read, interpret and apply fire-rated masonry construction requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Identify fire resistance level (FRL), location and composition of masonry wall.
 - 1.5 Use measurements and apply formulas to calculate material quantities.
 - 1.6 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.7 Identify potential hazards and determine and implement control measures.
 - 1.8 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant person.
 - 1.9 Check conformity of materials against the specifications and place materials in preparation for the work.
- 2 Construct masonry wall.
- 2.1 Set out and mark position, gauge and bond of masonry wall.
 - 2.2 Mix mortar and check consistency with job requirements.
 - 2.3 Construct fire-rated masonry wall maintaining bond, gauge and level to the set-out height.
 - 2.4 Remove excess mortar, rake or rule joints to specified profile and depth.
 - 2.5 Clean and brush down face of brickwork prior to mortar drying.
- 3 Clean up.
- 3.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 3.2 Clean tools and equipment, check for serviceability and report damage or faults.

- 3.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCL3014A Install fire-rated masonry construction

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3014 Install fire-rated masonry construction

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3014A Install fire-rated masonry construction. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing a 2.1 m long x 2.0 m high fire-resistant masonry wall.

In doing this, the candidate must:

- install a fire-rated steel door jamb
- fire-proof two service penetrations of various sizes
- fit fire-rated insulation between brick wall and roof covering
- comply with fire control and separation requirements of National Construction Code (NCC) and other standards and legislation.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials used in fire-rated masonry construction:
 - mortar ingredients
 - fire-resistant masonry blocks and bricks
 - fire seals and insulation
- principles of heat and effects on materials
- fire control and separation required by the NCC and other legislation:
 - fire resistant levels (FRL) of materials used in fire-rated masonry requirements
- processes and techniques for:
 - installing fire-rated masonry
 - damp proofing and flashing
 - installing fire-rated steel door jambs
 - fitting continuous fire-rated seal between structure and roof cladding
- construction terminology relating to fire-rated masonry construction
- functional and operational features of plant, equipment, hand and power tools

- workplace safety:
 - job safety and environmental analysis (JSEA)
 - work at heights
 - hazardous manual handling
 - exposure to silica
 - exposure to loud noise
- acceptable brickwork tolerances stated in Australian Standards and building codes
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3015 Construct decorative brickwork

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3015A Construct decorative brickwork. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct decorative brickwork. It applies to bricklayers and block layers who work on new and existing structures.

This unit is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job. |
|---------------------|--|

- 1.2 Read, interpret and apply decorative brick construction requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Use measurements and apply formulas to calculate material quantities.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant personnel.
 - 1.8 Check conformity of materials against the specifications and place materials in preparation for the work.
- 2 Set out and prepare for decorative brickwork.
- 2.1 Identify structural and design details of decorative brickwork and panels from plans and specifications.
 - 2.2 Locate position and set out specified design.
 - 2.3 Determine batch proportions, mortar colour, joint size and profile, method of tying and damp proofing.
 - 2.4 Select and sort bricks for appearance, dimensions, colour variations, durability and damage.
 - 2.5 Batch and mix mortar ensuring consistency with job requirements.
- 3 Lay decorative brickwork.
- 3.1 Lay corbel to form feature protrusions adhering to the overhang specifications and maintaining level, bond and gauge.
 - 3.2 Form a protruding plinth and sill using plinth bricks.
 - 3.3 Create a dentil course using standard bricks.
 - 3.4 Create a dogtooth pattern using standard bricks.

- 3.5 Lay decorative brickwork panel using accurate cuts and maintaining bond and gauge consistency.
 - 3.6 Rake or rule joints to specified profile and depth.
 - 3.7 Brush down face of brickwork/blockwork prior to drying to remove unwanted mortar.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3015A Construct decorative brickwork

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3015 Construct decorative brickwork

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3015A Construct decorative brickwork. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing a decorative brick wall to a minimum height of 1.5 m.

In doing this, the candidate must incorporate a 900 mm x 1200 mm minimum decorative masonry panel, which includes:

- two base plinth and sill courses using full bricks
- three courses of corbelling
- one dogtooth course pattern
- one dental course pattern
- internal and external junctions neatly cut and flushed
- various finishes to mortar joints
- comply with tolerances stated in the current Australian Standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of decorative brick materials:
- processes and techniques of:
 - setting out and constructing decorative brickwork
 - strengthening brickwork around openings
- terminology relating to decorative brickwork
- brick bond patterns
- functional and operational features of plant, equipment and hand and power tools
- workplace safety:
 - dust suppression
 - exposure to silica
 - exposure to loud noise
 - job safety and environmental analysis (JSEA)

- working at height
- Australian Standards and building codes relating to acceptable brickwork tolerances
- architectural styles and masonry details
- architectural elements of buildings
- features of working drawings and specification
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3016 Construct battered masonry walls and piers

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3016A Construct battered masonry walls and piers. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct battered masonry wall and piers. It applies to bricklayers and blocklayers who work on new and existing structures.

This unit is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job. |
|---------------------|--|

- 1.2 Read, interpret and apply battered masonry walls and pier construction requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Use measurements and apply formulas to calculate material quantities from plans and specifications.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant person.
 - 1.8 Check conformity of materials against the specifications and place materials in proximity of the work.
- 2 Prepare base and lay masonry to battered wall.
- 2.1 Set out wall position and length on footing.
 - 2.2 Set out piers maintaining gauge and brickwork bond.
 - 2.3 Set up profile to the specified batter angle and check with battered rod board and battering level.
 - 2.4 Lay first course level and straight.
 - 2.5 Lay masonry to the specified pattern maintaining bond and gauge.
 - 2.6 Finish mortar joint as specified and brush down masonry face work.
- 3 Clean up.
- 3.1 Clear the work area, and dispose of, reuse or recycle materials workplace and environmental requirements.
 - 3.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 3.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3016A Construct battered masonry walls and piers.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3016 Construct battered masonry walls and piers

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3016A Construct battered masonry walls and piers. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing a minimum 1.0 m high x 1.5 m long x 230 mm battered masonry wall.

In doing this, the candidate must:

- construct a 1.0 m long x 230 mm wide pier at 90 degrees and to the same height as the battered wall
- lay brick on edge capping to top of wall
- comply with battered masonry walls and piers standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials for battered wall construction:
 - mortar ingredients and consistency
 - waterproofing products
- designed concrete foundations to counteract overturning or sliding of battered walls
- processes and techniques for constructing various battered walls and piers:
 - installing drainage pipes
 - backfilling materials and aggregates
 - installing weep holes
- construction terminology relating to battered wall construction
- brick bond patterns
- functional and operational features of plant, equipment, hand and power tools
- workplace safety requirements:
 - hierarchy of control
 - hazardous manual tasks
 - exposure to silica

- exposure to loud noise
- features of working drawings and specification
- key requirements of the National Construction Code (NCC) relevant to battered masonry wall and pier construction
- standards and building codes relating to acceptable tolerances in brickwork
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCB3017 Carry out tuck pointing and repointing to masonry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCB3017A Carry out tuck pointing to brickwork. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to apply repointing and decorative tuck pointing for joint finishes to masonry on different types and styles of buildings.

This unit applies to bricklayers, and stonemasons who work on new, existing and heritage structures. It is suitable for people operating with some autonomy.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1	Plan and prepare for	1.1	Select, correctly fit and use personal protective
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- work. equipment (PPE) appropriate for job.
- 1.2 Read and interpret brickwork tuck pointing and repointing requirements from work instructions, standards and codes.
 - 1.3 Follow relevant information from work workplace safety, workplace procedures and environmental documentation.
 - 1.4 Use measurements and apply formulas to calculate material quantities.
 - 1.5 Determine job priorities and sequence job tasks in conjunction with others on site.
 - 1.6 Identify potential hazards and determine and implement control measures.
 - 1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.8 Check conformity of materials against the specifications.
- 2 Prepare brickwork surfaces.
- 2.1 Remove individual loose or broken bricks.
 - 2.2 Match and replace broken bricks.
 - 2.3 Scrap mortar joints to specified depth.
 - 2.4 Clean brickwork surface and joints in preparation for tuck pointing and repointing.
 - 2.5 Form an indent key to bond with joint finishing material.
 - 2.6 Prepare mortar/putty to required colour and mix.
- 3 Carry out tuck pointing and repointing.
- 3.1 Apply decorative tuck pointing to bed and perpendicular joints to specified depth and shape.
 - 3.2 Repoint masonry joints ensuring that bed and perpendicular joints are compacted and full.
 - 3.3 Remove excess putty/mortar.
 - 3.4 Repair any imperfections and lightly brush down

brickwork.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage or faults.
 - 4.3 Store and secure tools and equipment.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3017A Carry out tuck pointing to brickwork

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3017 Carry out tuck pointing and repointing to masonry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3017A Carry out tuck pointing to brickwork. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by tuck pointing and repointing the bed and perpendicular joints of a masonry wall.

In doing this, the candidate must:

- apply decorative tuck pointing to a minimum of two square metres to a specified colour and finish
- apply repointing to a minimum of two square metres.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials for tuck pointing and repointing:
 - mortar ingredients and consistency
 - mortar adhesive ability, stability and durability
 - colouring agents and pigments
 - slaked rock lime
- processes and techniques for tuck pointing and repointing:
 - door and window reveals and sills
 - internal and external corners
 - maintaining consistent bed and perpendicular joints
- terminology relating to tuck pointing:
 - ribbon
 - struck
- functional and operational features of plant, equipment, hand and power tools
- workplace safety:
 - job safety and environmental analysis (JSEA)

- work at heights
- hazardous manual tasks
- hazardous substances
- exposure to silica
- exposure to loud
- work instructions, standards, codes relating to tuck pointing and repointing
- environmental and waste management requirements:
 - disposal of waste material
 - recycling materials

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCL3018 Install aerated autoclaved concrete products

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3018A Install aerated autoclaved concrete products. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install aerated autoclaved concrete (AAC) products to walls and floors of different types and styles of buildings.

It includes installing AAC blockwork, lintels, floor panels and wall panels to buildings or structures.

The unit applies to bricklayers and block layers who work on new and existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-----------------------|--|
| 1 Prepare for work. | 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job. |
| | 1.2 Read, interpret and apply AAC installation requirements from current plans, specifications, standards and codes. |
| | 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures. |
| | 1.4 Use measurements and apply formulas to calculate material quantities from plans and specifications. |
| | 1.5 Determine job priorities and sequence job tasks in consultation with others on site. |
| | 1.6 Identify potential hazards and determine and implement control measures. |
| | 1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person. |
| | 1.8 Check conformity of materials against the specifications. |
| 2 Set out AAC blocks. | 2.1 Set out and mark base blockwork gauge and bond. |
| | 2.2 Set position of damp-proof course (DPC) and wall ties. |
| | 2.3 Set out and mark load bearing blockwork. |
| | 2.4 Set out door and window positions. |
| 3 Lay AAC blockwork. | 3.1 Mix adhesive and check consistency with job and manufacturer's requirements and apply evenly to AAC blocks. |
| | 3.2 Lay blocks level, plumb and to a straight line. |
| | 3.3 Install damp proofing and all associated ties. |
| | 3.4 Cut blocks accurately to maintain even bond at end of course and into openings. |

- 3.5 Install AAC lintels level, straight and maintain bond and gauge to openings.
 - 3.6 Fix all brackets for control joints for internal, external and wall junctions and roof tie down.
 - 3.7 Remove excess adhesive in preparation for wall finish.
- 4 Install AAC floor panels.
 - 4.1 Check floor supports are level and prepared for the AAC floor panels.
 - 4.2 Check floor panel size, span for load design and install panels applying the manufacturer's fitting requirements.
 - 4.3 Place reinforcement rods between the panels and apply concrete grout to a solid and flat finish.
 - 4.4 Remove excess grout in preparation for floor finish.
- 5 Install AAC wall panels.
 - 5.1 Check base is level and prepared for specified tie downs.
 - 5.2 Set out vertical panels for load bearing application and horizontal panels for cladding to manufacturer's specifications.
 - 5.3 Lay horizontal or vertical panels level, plumb and to a straight line using the recommended installation process.
 - 5.4 Fix specified brackets to panel joints, internal, external or T intersections, structural supports and roof tie downs.
 - 5.5 Install all damp proofing and sealants.
 - 5.6 Remove excess adhesive and repair any damaged panels in preparation for wall finish.
- 6 Clean up.
 - 6.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 6.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 6.3 Store and secure tools and equipment following

workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCB3018A Install aerated autoclaved concrete products

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCL3018 Install aerated autoclaved concrete products

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCL3018A Install aerated autoclaved concrete products. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by building an aerated autoclaved concrete (AAC) block wall to a minimum height 1.5 m and minimum length of 2.0 m.

In doing this, the candidate must:

- build an external corner into the wall
- install damp proof course
- install a door opening with lintel and flashing
- install roof tie down requirements
- install AAC vertical and horizontal wall panels, using the recommended fixing system, to a minimum of a four-square metre timber wall
- comply with ACC manufacturer's specifications, standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials for AAC construction:
 - mortar consistency and adhesives
 - AAC block and panel bond patterns
 - expansion and control and articulation joints
- fire control and separation required by the National Construction Code (NCC) and other legislation
- processes and techniques for AAC block and panel construction:
 - vermin control and anti-termite measures

- damp proofing, flashing and ventilation
- wall tying components
- lintels and load bearing components
- timber, steel and aluminium windows
- timber and steel door frames
- installing AAC flooring panels to suspended flooring system, using the recommended fixings
- construction terminology relating to AAC block and panel construction
- functional and operational features of plant, equipment and hand and power tools
- workplace safety requirements:
 - job safety and environmental analysis (JSEA)
 - work at heights
 - hazardous manual tasks
 - hazardous materials
 - exposure to silica
 - exposure to loud noise
- features of working drawings and specification
- key requirements of the National Construction Code (NCC) relevant to ACC installation
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three store

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is equivalent to CPCCBS6001 Research and evaluate construction methods and materials for residential buildings to three storeys.

Application

This unit of competency specifies the skills and knowledge required to develop an understanding of traditional, new and emerging construction methods and materials, including systems and components for services, for Class 1 and 10 buildings as defined in the National Construction Code (NCC), and up to three storeys and not exceeding 2,000 square metres in floor area. It requires researching and evaluating construction industry information, including research papers, engineering reports, material specifications and performance data; and establishing information management procedures to maintain data currency, classify and store research information.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide advisory code-consulting services or authorised statutory services relating to planning or building permit application assessment or building audit and inspection services for Class 1 and 10 buildings.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---|-----|--|
| 1 Research and evaluate construction methods for Class 1 or 10 buildings. | 1.1 | Research information to identify traditional, new and emerging construction methods and conduct required checks to confirm the validity and reliability of gathered information. |
| | 1.2 | Investigate and evaluate methods for site investigation and preparation. |
| | 1.3 | Evaluate the application of different construction methods to structural elements, components or systems for Class 1 or 10 buildings. |
| 2 Research and evaluate construction materials for Class 1 or 10 buildings. | 2.1 | Research information to identify traditional, new and emerging construction materials and conduct required checks to confirm the validity and reliability of gathered information. |
| | 2.2 | Evaluate the application of different construction materials to structural elements, components or systems for Class 1 or 10 buildings. |
| 3 Research and evaluate service provisions for Class 1 or 10 buildings. | 3.1 | Research information to identify service requirements, compliance and installation methods, and conduct required checks to confirm the validity and reliability of gathered data. |
| | 3.2 | Evaluate options for energy supply and infrastructure, heating and cooling systems, fire protection and gas and hydraulic service supply and infrastructure. |
| | 3.3 | Evaluate service systems and components in relation to different user groups, geographical locations and climatic conditions, and note strengths and weaknesses of each context. |
| 4 Report research and evaluation outcomes. | 4.1 | Prepare report containing research and evaluation findings, recommendations and supporting evidence for Class 1 or 10 building according to workplace requirements. |
| | 4.2 | Distribute research and evaluation report to relevant persons for feedback. |

- 4.3 Implement information management procedures to maintain data currency and classify and store research and evaluation information for easy retrieval.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
- interpret construction material characteristics and performance data using fractions, decimals, percentages, ratio, rates and proportions
- use mathematical language relating to properties of materials including fire ratings and load bearing capacities.

Unit Mapping Information

Supersedes and is equivalent to CPCCBS6001 Research and evaluate construction methods and materials for residential buildings to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three store

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is equivalent to CPCCBS6001 Research and evaluate construction methods and materials for residential buildings to three storeys.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by researching and evaluating construction methods and materials to support building surveying services for three different buildings of less than 2,000 square metres in floor area, involving the following Classes as defined by the National Construction Code (NCC):

- two buildings in Class 1, each with three storeys
- one building in Class 1 and less than three storeys, or in Class 10.

Each building must be in a different geographical location/area selected from the following:

- high wind area
- highly corrosive area (within 1 kilometre of the ocean)
- bushfire-prone area
- cyclone area
- earthquake area
- alpine area
- metropolitan area.

For each building, the candidate must evaluate:

- construction methods and materials in relation to different geographical locations and climatic conditions and note strengths and weaknesses of each context
- the application of different construction methods to:
 - foundations and footings
 - structural and supporting systems
 - enclosing systems
 - fire safety
 - health and amenity
 - safe movement and access
 - energy efficiency

- construction processes in relation to trade sequencing
- the application of different construction materials to:
 - foundations and footings
 - structural and supporting systems
 - enclosing systems.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics and applications of materials suitable for structural elements and building envelope of Class 1 and 10 buildings:
 - construction materials in common use:
 - adhesives and sealants
 - admixtures
 - clay products
 - concrete and concrete products
 - glass
 - masonry
 - metal
 - mortar for load bearing walls
 - plaster and plasterboard
 - plastic
 - pre-stressed structural concrete components
 - protective and fire-rated protective coatings
 - timber and timber products
 - waterproofing
 - suitability of construction materials for different applications:
 - behaviour under stress
 - compatibility with other materials in use
 - cost-effectiveness
 - durability
 - energy efficiency
 - environmental impact
 - fire resistance
 - standards
 - structural suitability
 - sustainability
 - visual characteristics
- compliance requirements of construction materials and methods for Class 1 and 10 buildings in different geographic locations and climate zones:

- NCC
- Australian Standards referenced by the NCC
- components and systems for services associated with Class 1 and 10 buildings:
 - compliance requirements
 - installation methods
- different construction methods and systems for Class 1 and 10 buildings applicable to:
 - methods for site investigation and preparation:
 - principles and practices of site establishment: drainage, earthworks and pest risk management
 - soil investigation, assessment and clarification
 - structural and supporting systems:
 - masonry systems: earthwall construction, reinforced and unreinforced masonry and weatherproofing
 - systems for floors, roofs, sub-floor ventilation and walls
 - enclosing systems:
 - glazing
 - gutters and downpipes
 - roof and wall cladding
 - fire safety:
 - clearances and protection from heating appliances
 - fire separation
 - requirements for bushfire areas
 - smoke alarms
 - health and amenity:
 - facilities
 - light
 - room heights
 - sound insulation
 - ventilation
 - wet areas
 - safe movement and access:
 - balustrades
 - stair construction
 - swimming pool access
 - energy efficiency:
 - air movement
 - building fabric
 - building sealing and insulation
 - external glazing
 - services

- information management procedures to maintain data currency, and classify and store information for easy retrieval
- NCC classifications and definitions for Class 1 and 10 buildings
- structural engineering principles sufficient to interpret and apply NCC requirements to work activities
- types and sources of reliable information on traditional, new and emerging uses of construction materials and methods.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to equipment, software, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys

Modification History

Release 1 This version released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is equivalent to CPCCBS6002 Research and evaluate construction methods and materials for commercial buildings to three storeys.

Application

This unit of competency specifies the skills and knowledge required to develop an understanding of traditional, new and emerging construction methods and materials, including systems and components for services, for buildings included in Classes 2 to 9 as defined in the National Construction Code (NCC), up to three storeys and not exceeding 2,000 square metres in floor area. It includes researching and evaluating construction industry information, including research papers, engineering reports, material specifications and performance data; and establishing information management procedures to maintain data currency, classify and store research information.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide advisory code-consulting services or authorised statutory services relating to planning or building permit application assessment or building audit and inspection services for Class 2 to 9 buildings.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Research and evaluate construction methods for commercial buildings included in Classes 2 to 9.	<p>1.1 Research information to identify traditional, new and emerging construction methods and conduct required checks to confirm the validity and reliability of gathered information.</p> <p>1.2 Investigate and evaluate methods for site investigation and preparation.</p> <p>1.3 Evaluate the application of different construction methods to structural elements, components or systems for buildings included in Classes 2 to 9.</p>
2 Research and evaluate construction materials for commercial buildings included in Classes 2 to 9.	<p>2.1 Research information to identify traditional, new and emerging construction materials and conduct required checks to confirm the validity and reliability of gathered data.</p> <p>2.2 Evaluate the application of different construction materials to structural elements, components or systems for buildings included in Classes 2 to 9.</p> <p>2.3 Evaluate construction materials to determine fire resistance and performance for particular building occupancies and usage.</p>
3 Research and evaluate service provisions for commercial buildings included in Classes 2 to 9.	<p>3.1 Research information to identify service requirements, compliance and installation methods, and conduct required checks to confirm the validity and reliability of gathered data.</p> <p>3.2 Evaluate options for energy supply and infrastructure, heating and cooling systems, fire protection, and gas and hydraulic service supply and infrastructure.</p> <p>3.3 Evaluate service systems and components in relation to different user groups, geographical locations and climatic conditions, and note strengths and weaknesses of each context.</p>
4 Report research and evaluation outcomes.	4.1 Prepare report containing research and evaluation findings, recommendations and supporting evidence for commercial buildings included in Classes 2 to 9

according to workplace requirements.

- 4.2 Distribute research and evaluation report to relevant persons for feedback.
- 4.3 Implement information management procedures to maintain data currency and classify and store research and evaluation information for easy retrieval.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
 - interpret construction material characteristics and performance data using fractions, decimals, percentages, ratio, rates and proportions
 - use mathematical language relating to properties of materials including fire ratings and load bearing capacities.
-

Unit Mapping Information

Supersedes and is equivalent to CPCCBS6002 Research and evaluate construction methods and materials for commercial buildings to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys

Modification History

Release 1 This version released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is equivalent to CPCCBS6002 Research and evaluate construction methods and materials for commercial buildings to three storeys.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by researching and evaluating construction methods and materials to support building surveying services for three different projects involving the follow Classes of buildings as defined by the National Construction Code (NCC):

- one project incorporating Class 5 or Class 6
- one project incorporating Class 2 or Class 3 or Class 9c
- one project incorporating Class 7 or Class 8.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location/area selected from the following:

- high wind area
- highly corrosive area (within 1 kilometre of the ocean)
- bushfire-prone area
- cyclone area
- earthquake area
- alpine area
- metropolitan area.

For each building, the candidate must evaluate:

- construction methods and materials in relation to different geographical locations and climatic conditions and note strengths and weaknesses of each context
- the application of different construction methods to:
 - foundations and footings
 - structural and supporting systems
 - enclosing systems
 - installation of services
- construction processes in relation to trade sequencing

- the application of different construction materials to:
 - foundations and footings
 - structural and supporting systems
 - enclosing systems.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics, including fire resistance and applications of materials suitable for structural elements and building envelope of buildings included in Classes 2 to 9
- compliance requirements of construction materials and methods for buildings included in Classes 2 to 9 in different geographic locations and climate zones:
 - NCC
 - Australian Standards referenced by the NCC
- components and systems for services associated with buildings included in Classes 2 to 9:
 - compliance requirements
 - installation methods
- different construction methods and systems applicable to the structural elements and building envelope of buildings included in Classes 2 to 9:
 - methods for site investigation and preparation:
 - principles and practices of site establishment: underpinning, de-watering, ground stabilisation and demolition procedures
 - soil investigation, assessment and clarification
 - foundations and footings:
 - anchors, including grouted, mechanical or rock
 - basements
 - damp proof courses
 - footing systems
 - grillage
 - ground stabilisation
 - membranes
 - pest control
 - retaining walls
 - shoring
 - systems for earthquake zones
 - tanking
 - underpinning
 - water exclusion
 - structural and supporting systems:
 - forces
 - loads

- openings
- spatial relationships
- stresses and strains applied to arches, beams, braces, columns, concrete floor slabs, load-bearing walls, masonry ties and anchors, roof frames (including trusses) and structural footings
- structural materials and systems for floors, roofs, sub-floors and walls
- systems for cyclonic areas and earthquake zones
- enclosing systems, materials and fixings:
 - claddings and linings
 - coatings
 - finishes
 - flashings
 - linings, including acoustic system installations and fire-rated systems
 - partitioning
 - sarking and insulations
 - wet areas
- information management procedures to maintain data currency, and classify and store information for easy retrieval
- NCC classifications and definitions for buildings included in Classes 2 to 9
- structural engineering principles sufficient to interpret and apply NCC requirements to work activities
- types and sources of reliable information on traditional, new and emerging uses of construction materials and methods.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to equipment, software, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6103 Identify and apply legal and ethical requirements to building surveying functions

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is equivalent to CPCCBS6003 Apply legal and ethical requirements to building surveying functions.

Application

This unit of competency specifies the skills and knowledge required to identify and apply building control legislation, ethical standards and industry codes of practice to building surveying functions. It includes identifying and applying the requirements of particular geographic locations, climate zones, and local planning schemes and codes.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide building surveying services while operating in a highly regulated environment.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify and apply legal and ethical standards.

1.1 Review workplace code of conduct to clarify own responsibilities and apply to building surveying activities and client communications.

- 1.2 Identify potential conflicts of interest prior to undertaking building surveying projects according to workplace code of conduct.
 - 1.3 Check client contractual arrangements to confirm compliance with legislative and regulatory requirements.
 - 1.4 Conduct research to confirm own authority, licence and insurances to undertake building surveying activities.
 - 1.5 Apply legal and ethical standards to building surveying activities including client and stakeholder communications.
- 2 Identify and apply building control legislative and regulatory requirements.
 - 2.1 Research and identify relevant jurisdictional building control legislation and regulations and apply to building surveying activities.
 - 2.2 Identify relevant requirements of the National Construction Code (NCC) and Australian Standards and apply to building surveying activities.
 - 2.3 Research and identify relevant jurisdictional authority planning constraints and apply to building surveying activities.
- 3 Identify and apply relevant administrative requirements.
 - 3.1 Identify and follow timelines, documentation and compliance requirements of relevant authorities according to the nature of building surveying tasks being undertaken.
 - 3.2 Submit exemption requests to relevant authorities according to legislative and regulatory procedures.
 - 3.3 Anticipate, identify and manage problems in meeting administrative requirements of relevant authorities and seek advice as required from relevant persons.
 - 3.4 Identify and maintain record-keeping processes to meet legislative and regulatory requirements.
- 4 Communicate and manage building
 - 4.1 Advise client on the availability and scope of internal and external dispute resolution processes.

surveying legal requirements.	4.2	Manage dispute or complaint about own building surveying services professionally and ethically to resolution according to workplace requirements and relevant codes of practice.
	4.3	Check and verify that building contractors hold appropriate licence, insurances and registration for building Class and type.
5 Identify and apply processes to enforce requirements of legislation.	5.1	Receive and process advice or complaints regarding non-compliant or unsafe building works according to workplace requirements.
	5.2	Arrange and conduct site inspection of properties and buildings to assess extent of non-compliance and risk to public health and safety and record detailed observations on site.
	5.3	Seek advice from relevant persons to clarify extent of non-compliance or risk to public health and safety.
	5.4	Prepare building orders or notices to relevant persons where properties or buildings are found to be non-compliant or posing a risk to public health and safety.
	5.5	Identify and apply statutory enforcement procedures to ensure required remedies to building works are completed within specified timeframes and to required compliance standards.
	5.6	Maintain and use accurate, detailed and current records to represent clients or other stakeholders according to workplace and regulatory requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to use questioning, active listening, paraphrasing and summarising to seek advice and determine client or stakeholder needs
- reading skills to understand complex vocabulary used in the NCC and building control legislation and regulations.

Unit Mapping Information

Supersedes and is equivalent to CPCCBS6003 Apply legal and ethical requirements to building surveying functions

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6103 Identify and apply legal and ethical requirements to building surveying functions

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is equivalent to CPCCBS6003 Apply legal and ethical requirements to building surveying functions.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by identifying and applying the legal and ethical requirements of the applicable jurisdiction, workplace and industry codes of practice to building surveying functions for one building project.

In doing the above, the candidate must arrange and conduct a site inspection of a Class 1 building to assess the extent of non-compliance and risk to public health and safety noting the following while on site:

- details of inspection conducted:
 - date, location and time
 - names of those who conducted and participated in the inspection, including other specialist experts or consultants
 - property identification details
- documents sighted or provided at the inspection
- interviews or discussions held on site
- observations made during inspection.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- authorities, licences and insurances to undertake building surveying activities in relevant jurisdictions
- dispute-resolution procedures available to property owners and community members in relevant jurisdictions
- duty of care to clients and subsequent building owners
- legislative and regulatory compliance requirements for buildings in different climate zones and geographic locations:
 - building control legislation and regulations

- National Construction Code (NCC) including referenced Australian Standards to meet deemed-to-satisfy provisions and/or performance solutions
- legislative and regulatory requirements for professional conduct in communications with clients and building contractors
- nature of admissible evidence that may be presented in arbitration hearings or court proceedings relating to building disputes
- principles of contract law that apply to building surveying contractual agreements with clients or applicants
- principles of negotiation and conflict resolution applicable to professional relationships
- processes for representing clients in arbitration hearings and court proceedings relating to building disputes
- requirements for documentation compliance in relevant jurisdictions
- scope and limitations of the statutory enforcement authority regulating building surveyors in relevant jurisdictions.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to equipment, software, documentation, properties and buildings required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6104 Assess and advise on compliance of design documentation for Class 1 and 10 buildings to three storey

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6004 Assess and advise on compliance of design documentation for residential buildings to three storeys.

New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to assess proposed design documentation during the design process for buildings included in National Construction Code (NCC) definitions for Class 1 and 10 up to three storeys and not exceeding 2,000 square metres in floor area. It includes providing client advice on the preparation of planning and building approval applications and the compliance of design documentation with the building and planning legislation, regulations, codes and standards that apply to the nature and location of each project.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide advisory code-consulting services to building and construction professionals involved in developing building design documentation up to the building approval application stage.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|--|
| 1 Plan and manage code-consulting services. | 1.1 Identify and confirm scope and nature of design project for Class 1 or 10 building, and timelines, fees and details of services to be offered at different project stages. |
| | 1.2 Identify, engage and brief relevant persons to provide advice at different stages of project or on specialist areas of expertise. |
| | 1.3 Advise and monitor project management processes to ensure accurate and timely advice is provided within the scope of specified service levels. |
| | 1.4 Advise and monitor file management processes according to workplace requirements. |
| 2 Confirm project compliance requirements for Class 1 or 10 building. | 2.1 Conduct research to confirm jurisdictional building control legislation and regulations for the building and its location. |
| | 2.2 Conduct research to confirm relevant requirements of the NCC and Australian Standards for Class 1 or 10 building and its location. |
| | 2.3 Research planning constraints for building in consultation with relevant jurisdictional authority. |
| | 2.4 Consult with relevant persons to ensure technically accurate interpretation and application of compliance requirements in relation to performance solutions. |
| | 2.5 Explain compliance requirements for building to client and invite and address questions. |
| 3 Advise on planning approval compliance of drawings and documentation for Class 1 or 10 building. | 3.1 Advise client of drawings and documentation required for building planning approval process. |
| | 3.2 Examine architectural drawings and documentation prepared for planning approval application to ensure completeness according to service agreement. |
| | 3.3 Identify and record planning approval compliance issues |

- and seek specialist advice as required to determine options for their resolution.
- 3.4 Identify and document cost-effective and efficient design alternatives that meet planning approval compliance requirements and explain to client.
- 3.5 Prepare compliance advisory report, present to client and invite and address questions.
- 4 Advise on building approval compliance of drawings and documentation for Class 1 or 10 building.
- 4.1 Advise client of drawings and documentation required for building approval process.
- 4.2 Examine architectural drawings and documentation prepared for building approval application to ensure completeness according to service agreement.
- 4.3 Identify and record building approval compliance issues and seek specialist advice as required to determine options for their resolution.
- 4.4 Identify and document cost-effective and efficient design alternatives that meet building approval compliance requirements and explain to client.
- 4.5 Prepare and present compliance advisory report to client and invite and address questions to explain content.
- 5 Respond to client enquiries.
- 5.1 Assess client requests for compliance information according to service agreement and negotiate and agree additional fees as required.
- 5.2 Assess information request and research appropriate response in consultation with relevant persons as required.
- 5.3 Present client advice in the required format and invite and address questions to explain content.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to interpret ratios, rates and proportions when examining architectural drawings and documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6004 Assess and advise on compliance of design documentation for residential buildings to three storeys

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6104 Assess and advise on compliance of design documentation for Class 1 and 10 buildings to three storey

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6004 Assess and advise on compliance of design documentation for residential buildings to three storeys.

New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by assessing and advising on the compliance of design documentation for three buildings involving the following Classes as defined by the National Construction Code (NCC):

- two types of Class 1 buildings in different geographical locations/areas selected from:
 - high wind area
 - highly corrosive area (within 1 kilometre of the ocean)
 - bushfire-prone area
 - cyclone area
 - earthquake area
 - alpine area
 - metropolitan area
- one Class 10 building excluding sheds and swimming pools.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area.

While performing the above, the candidate must analyse complete sets of building design documentation for three related building approval applications and, for each application, provide advice on two cost-effective, energy efficient and compliant design alternatives.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- different compliance requirements of planning and building applications
- NCC classifications and definitions for Class 1 and 10 buildings:
 - building types

- geographic and climate zones
- possible solutions to design documentation compliance issues for building and planning applications to meet the requirements of the NCC and:
 - insurers
 - jurisdictional legislation and regulations
 - statutory authorities governing the environment, fire protection and services
- project management strategies that ensure thorough and timely advice is delivered according to service level agreement
- regulatory and legislative compliance requirements for Class 1 and 10 buildings in different climate zones and geographic locations:
 - building control legislation and regulations
 - NCC including referenced Australian Standards to meet deemed-to-satisfy provisions and/or performance solutions
- regulatory constraints that govern the relationship between the advisory and statutory roles of building surveyors
- types of disciplines from which specialist advice may be sought.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to equipment, software, architectural drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6105 Assess and advise on compliance of design documentation for Class 2 to 9 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6005 Assess and advise on compliance of design documentation for commercial buildings to three storeys.

New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to assess proposed design documentation during the design process for buildings included in National Construction Code (NCC) definitions for Classes 2 to 9 (up to three storeys). It includes providing client advice on the preparation of planning and building approval applications and the compliance of design documentation with the building and planning legislation, regulations, codes and standards that apply to the nature and location of each project.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide advisory code-consulting services to building and construction professionals involved in developing building design documentation up to the building approval application stage.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and manage code-consulting services.
 - 1.1 Identify and confirm scope and nature of design project for building included in Classes 2 to 9, and timelines, fees and details of services to be offered at different project stages.
 - 1.2 Identify, engage and brief relevant persons to provide advice at different stages of project or on specialist areas of expertise.
 - 1.3 Advise and monitor project management processes to ensure accurate and timely advice is provided within the scope of specified service levels.
 - 1.4 Advise and monitor file management processes according to workplace requirements.
 - 2 Confirm project compliance requirements for building included in Classes 2 to 9.
 - 2.1 Conduct research to confirm jurisdictional building control legislation and regulations for building and project location.
 - 2.2 Conduct research to confirm relevant NCC and Australian Standards requirements for building included in Classes 2 to 9 and project location.
 - 2.3 Research planning constraints for building in consultation with relevant jurisdictional authority.
 - 2.4 Consult with relevant persons to ensure technically accurate interpretation and application of compliance requirements in relation to performance solutions.
 - 2.5 Explain compliance requirements for project to client and invite and address questions.
 - 3 Advise on planning approval compliance of drawings and documentation for building included in Classes 2 to 9.
 - 3.1 Advise client of drawings and documentation required for project planning approval process.
 - 3.2 Examine architectural drawings and documentation prepared for planning approval application to ensure completeness according to service agreement.
 - 3.3 Identify and record planning approval compliance issues and seek specialist advice as required to determine options for their resolution.

- | | | |
|---|-----|--|
| | 3.4 | Identify and document cost-effective and efficient design alternatives that meet planning approval compliance requirements and explain to client. |
| | 3.5 | Prepare compliance advisory report, present to client and invite and address questions. |
| 4 Advise on building approval compliance of drawings and documentation for building included in Classes 2 to 9. | 4.1 | Advise client of drawings and documentation required for project building approval process. |
| | 4.2 | Examine architectural drawings and documentation prepared for building approval application to ensure completeness according to service agreement. |
| | 4.3 | Identify and record building approval compliance issues and seek specialist advice as required to determine options for their resolution. |
| | 4.4 | Identify cost-effective and efficient design alternatives that meet building approval compliance requirements and explain to client. |
| | 4.5 | Prepare and present compliance advisory report to client and invite and address questions to explain content. |
| 5 Respond to client enquiries. | 5.1 | Assess client requests for compliance information according to service agreement and negotiate and agree additional fees as required. |
| | 5.2 | Assess information request and research appropriate response in consultation with relevant persons as required. |
| | 5.3 | Present client advice in the required format and invite and address questions to explain content. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to interpret ratios, rates and proportions when examining architectural drawings and documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6005 Assess and advise on compliance of design documentation for commercial buildings to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6105 Assess and advise on compliance of design documentation for Class 2 to 9 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6005 Assess and advise on compliance of design documentation for commercial buildings to three storeys.

New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by assessing and advising on the compliance of design documentation for three projects involving the following Classes of buildings as defined by the National Construction Code (NCC):

- one project incorporating Class 5 or Class 6
- one project incorporating Class 2 or Class 3 or Class 9c
- one project incorporating Class 7 or Class 8.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area.

While performing the above three projects, the candidate must analyse complete sets of building design documentation for three related building approval applications and, for each application, provide advice on two cost-effective, energy efficient and compliant design alternatives.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- different compliance requirements of planning and building applications
- NCC classifications and definitions for buildings included in Classes 2 to 9:
 - building types
 - geographic and climate zones
- possible solutions to design documentation compliance issues for building and planning applications to meet the requirements of the NCC and:
 - insurers
 - jurisdictional legislation and regulations

- statutory authorities governing the environment, fire protection and services
- project management strategies that ensure thorough and timely advice is delivered according to service level agreement
- regulatory and legislative compliance requirements for buildings included in Classes 2 to 9 in different climate zones and geographic locations:
 - building control legislation and regulations
 - NCC including referenced Australian Standards to meet deemed-to-satisfy provisions and/or performance solutions
- regulatory constraints that govern the relationship between the advisory and statutory roles of building surveyors
- types of disciplines from which specialist advice may be sought.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to equipment, software, architectural drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6107 Prepare planning and development applications for buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is equivalent to CPCCBS6007 Process planning applications for commercial buildings up to three storeys. Code and title changed to better reflect outcome. Function broadened to incorporate deleted CPCCBS6006 Process planning applications for residential buildings up to three storeys. Updated assessor requirements. Edited for clarity and updated to reflect current industry practice.

Application

This unit of competency specifies the skills and knowledge required to prepare planning and development applications for buildings included in National Construction Code (NCC) definitions for all classes of buildings up to three storeys and not exceeding 2,000 square metres in floor area. It includes gathering and assessing documentation that supports the planning and development application process required to obtain planning permission.

The unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to carry out the statutory role of ensuring that proposed building projects meet requirements for issuing planning permits.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to assess planning and development application.
 - 1.1 Review scope and nature of planning and development application against jurisdictional planning legislation including local planning schemes and policies.
 - 1.2 Use geographical and aerial mapping to assess development site for suitability.
 - 1.3 Identify need for specialist expertise and engage relevant persons to provide advice throughout the planning application process.

- 2 Assess planning and development application documentation.
 - 2.1 Review planning and development application documentation to ensure accuracy, currency and completeness according to local authority requirements, and request additional information from client as required.
 - 2.2 Confirm property ownership with reference to titles and other relevant documentation.
 - 2.3 Assess submitted documentation for compliance with current and relevant local planning scheme, codes and legislation, and document areas of non-compliance.
 - 2.4 Review site of proposed planning and development application for possible environmental protection laws and exclusions and note and document compliance requirements.
 - 2.5 Assess design plans for compliance with relevant legislation, codes and regulations, and document areas of non-compliance.
 - 2.6 Document required amendments to plans and proposed design alternatives to ensure compliance and communicate to client.
 - 2.7 Discuss non-compliances and proposed design alternatives with relevant persons to arrange re-submission of plans and documentation for planning approval.

- 3 Assess revised design plans and
 - 3.1 Assess revised plans and documentation for planning approval compliance.

documentation.

- 3.2 Identify design features requiring clarification and discuss with relevant persons to ensure plans meet compliance requirements.
- 3.3 Update client to provide updates on progress with planning and development application process.
- 3.4 Arrange required public notices and advertising according to regulatory and workplace requirements.
- 3.5 Document responses to objections according to regulatory and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to interpret ratios, rates and proportions when examining drawings and documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCCBS6007 Process planning applications for commercial buildings up to three storeys. Function broadened to incorporate deleted CPCCBS6006 Process planning applications for residential buildings up to three storeys. Updated assessor requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPCCBS6107 Prepare planning and development applications for buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is equivalent to CPCCBS6007 Process planning applications for commercial buildings up to three storeys. Code and title changed to better reflect outcome. Function broadened to incorporate deleted CPCCBS6006 Process planning applications for residential buildings up to three storeys. Updated assessor requirements. Edited for clarity and updated to reflect current industry practice.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by:

- preparing one planning and development application for a project involving a two or three-storey building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- legislative and local planning requirements governing the issuing of planning and development approvals in the jurisdictions relevant to each building specified in the performance evidence
- legislative roles and responsibilities of those issuing planning permits in the relevant jurisdiction
- planning permit processes and submission requirements including triggers for planning and development approvals
- types of disciplines from which specialist advice may be sought
- types of plans and documentation submitted as part of planning and development approval applications as required under relevant jurisdictional planning legislation for buildings to three storeys:
 - concept drawings to scale, with relevant calculations, levels, notes and specifications
 - planning and development approval application forms
 - proof of building site ownership.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

CPCCBS6108 Process building applications for Class 1 and 10 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6008 Process building applications for residential buildings up to three storeys.
- New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to process building applications for buildings included in National Construction Code (NCC) definitions for Class 1 and 10 up to three storeys and not exceeding 2,000 square metres in floor area. It includes gathering and assessing documentation that supports the building application process required to obtain a building permit.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to carry out the statutory role of ensuring that proposed building projects meet relevant compliance requirements prior to commencement of construction.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---------------------|-----|---|
| 1 | Plan and prepare to | 1.1 | Review scope and nature of building application for |
|---|---------------------|-----|---|

- assess building application.
- Class 1 or 10 building, and check to confirm compliance with relevant legislation, codes and local planning policies.
- 1.2 Identify and clarify specific building approval timelines and administrative requirements of the relevant local authority.
- 1.3 Inspect proposed development site to clarify nature of development and potential impact on surrounding environment and structures.
- 1.4 Identify need for specialist expertise and engage relevant persons to provide advice throughout the building application process.
- 1.5 Identify and initiate processes to achieve required consents or approvals from service authorities.
- 2 Assess building application documentation for Class 1 or 10 building.
- 2.1 Review building application documentation to ensure accuracy, currency and completeness according to local authority requirements, and request additional information from client as required.
- 2.2 Confirm property ownership with reference to titles and other relevant documentation.
- 2.3 Assess submitted documentation for compliance with current and relevant local planning scheme, codes and legislation, and document areas of non-compliance.
- 2.4 Review site of proposed building application for possible environmental protection laws and exclusions and note and document compliance requirements.
- 2.5 Assess design plans for compliance with relevant legislation, codes and regulations, and document areas of non-compliance.
- 2.6 Document required amendments to plans and proposed performance solutions to ensure compliance and communicate to client.
- 2.7 Discuss non-compliances and proposed performance solutions with relevant persons to arrange re-submission of plans and documentation for building approval.

- | | | |
|--|-----|---|
| 3 Assess revised design plans and documentation. | 3.1 | Assess revised plans and documentation for building approval compliance. |
| | 3.2 | Identify design features requiring clarification and discuss with relevant persons to ensure plans meet compliance requirements. |
| | 3.3 | Update client to provide updates on progress with building application process. |
| 4 Finalise building permit. | 4.1 | Arrange required public notices and document and handle objections according to regulatory and workplace requirements. |
| | 4.2 | Process final building permit including relevant permission conditions that ensure the environment, adjacent structures and any heritage listed structures are protected. |
| | 4.3 | Submit copy of building permit to local authority and relevant persons according to regulatory and workplace requirements. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to interpret ratios, rates and proportions when examining drawings and documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6008 Process building applications for residential buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6108 Process building applications for Class 1 and 10 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6008 Process building applications for residential buildings up to three storeys.

New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by processing three building applications involving the following Classes of buildings as defined by the National Construction Code (NCC):

- two Class 1 buildings
- one Class 10 building excluding sheds and swimming pools.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building permit processes and submission requirements
- legislative and local planning and building requirements governing the issuing of building approval permits in the jurisdictions relevant to each building specified in the performance evidence
- legislative roles and responsibilities of those issuing building permits in the relevant jurisdiction
- NCC classifications and definitions for Class 1 and 10 buildings:
 - building types
 - geographic and climate zones
- processes for seeking and obtaining approval or consent from service authorities
- types of disciplines from which specialist advice may be sought
- types of plans and documentation submitted as part of building applications for Class 1 and 10 buildings:
 - building approval application form
 - concept drawings to scale, with relevant calculations, levels, notes and specifications

- documentation applicable to or as specified by the local authority
- proof of building site ownership.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations. Submission of building permits to local authorities may be simulated.

Candidates must have access to equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6109 Process building applications for Class 2 to 9 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6009 Process building applications for commercial buildings up to three storeys.
- New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to process building applications for buildings included in the National Construction Code (NCC) definitions for Classes 2 to 9 up to three storeys and not exceeding 2,000 square metres in floor area. It includes gathering and assessing documentation that supports the building application process required to obtain a building permit.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to carry out the statutory role of ensuring that proposed building projects meet relevant compliance requirements prior to commencement of construction.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---------------------|-----|---|
| 1 | Plan and prepare to | 1.1 | Review scope and nature of building application for |
|---|---------------------|-----|---|

- assess building application.
- building included in Classes 2 to 9, and check to confirm compliance with relevant legislation, codes and local planning policies.
- 1.2 Identify and clarify specific building approval timelines and administrative requirements of the relevant local authority.
 - 1.3 Inspect proposed development site to clarify nature of development and potential impact on surrounding environment and structures.
 - 1.4 Identify need for specialist expertise and engage relevant persons to provide advice throughout the building application process.
 - 1.5 Identify and initiate processes to achieve required consents or approvals from service authorities.
- 2 Assess building application documentation for building included in Classes 2 to 9.
- 2.1 Review building application documentation to ensure accuracy, currency and completeness according to local authority requirements, and request additional information from client as required.
 - 2.2 Confirm property ownership with reference to titles and other relevant documentation.
 - 2.3 Assess submitted documentation for compliance with current and relevant local planning scheme, codes and legislation, and document areas of non-compliance.
 - 2.4 Review site of proposed building application for possible environmental protection laws and exclusions and note and document compliance requirements.
 - 2.5 Assess design plans for compliance with relevant legislation, codes and regulations, and document areas of non-compliance.
 - 2.6 Document required amendments to plans and proposed performance solutions to ensure compliance and communicate to client.
 - 2.7 Discuss non-compliances and proposed performance solutions with relevant persons to arrange re-submission of plans and documentation for building approval.

- | | | |
|--|-----|---|
| 3 Assess revised design plans and documentation. | 3.1 | Assess revised plans and documentation for building approval compliance. |
| | 3.2 | Identify design features requiring clarification and discuss with relevant persons to ensure plans meet compliance requirements. |
| | 3.3 | Update client to provide updates on progress with building application process. |
| 4 Finalise building permit. | 4.1 | Arrange required public notices and document and handle objections according to regulatory and workplace requirements. |
| | 4.2 | Process final building permit including relevant permission conditions that ensure the environment, adjacent structures and any heritage listed structures are protected. |
| | 4.3 | Submit copy of building permit to local authority and relevant persons according to regulatory and workplace requirements. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to interpret ratios, rates and proportions when examining drawings and documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6009 Process building applications for commercial buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6109 Process building applications for Class 2 to 9 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6009 Process building applications for commercial buildings up to three storeys.
- New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by processing building applications for three different projects involving the following Classes of buildings as defined by the National Construction Code (NCC):

- one project incorporating Class 5 or Class 6
- one project incorporating Class 2 or Class 3 or Class 9c
- one project incorporating Class 7 or Class 8.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building permit processes and submission requirements
- legislative and local planning and building requirements governing the issuing of building approval permits in the jurisdictions relevant to each building specified in the performance evidence
- legislative roles and responsibilities of those issuing building permits in the relevant jurisdiction
- NCC classifications and definitions for buildings included in Classes 2 to 9:
 - building types
 - geographic and climate zones
- processes for seeking and obtaining approval or consent from service authorities
- types of disciplines from which specialist advice may be sought
- types of plans and documentation submitted as part of building applications for buildings included in Classes 2 to 9:
 - building approval application form

- concept drawings to scale, with relevant calculations, levels, notes and specifications
- documentation applicable to or as specified by the local authority
- proof of building site ownership.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations. Submission of building permits to local authorities may be simulated.

Candidates must have access to equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6110 Conduct and report on building surveying audits of Class 1 and 10 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6010 Conduct and report on building surveying audits of residential buildings up to three storeys.

New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to audit Class 1 and 10 buildings against the current requirements of the National Construction Code (NCC) and local planning policies. These Class 1 and 10 buildings are as defined in the NCC up to three storeys and not exceeding 2,000 square metres in floor area. The unit includes planning and conducting audit activities including visual inspections, noting structural elements and taking photographic evidence, and reporting audit findings and recommendations.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide advisory code-consulting services, carry out building surveying audits and advise on building compliance. Building surveying audits are required as part of a sales process to inform planned works, including demolishing existing structures, or to inform planned upgrades to existing buildings.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.

demonstrate achievement of the element.

1 Scope and plan building surveying audit.

- 1.1 Review building surveying audit application for Class 1 or 10 building and related documentation to clarify property details and audit purpose.
- 1.2 Determine audit scope and limitations and negotiate agreed audit criteria with relevant persons.
- 1.3 Review relevant building plans and documentation prior to and during building surveying audit.
- 1.4 Confirm building ownership, classification and use, and contact owner or owner's corporation to arrange access to the building.
- 1.5 Research and identify compliance requirements for the building according to building classification, location and potential change of use.
- 1.6 Obtain required equipment and apply work health and safety (WHS) requirements to audit activities according to workplace requirements.
- 1.7 Identify need for expert advice and engage relevant specialist consultant.
- 1.8 Consult with local planning authority and other relevant persons to confirm building compliance requirements and relevant planning permissions.
- 1.9 Document audit plan outlining audit schedule, scope and limitations and audit compliance criteria.

2 Conduct building surveying audit for Class 1 or 10 building.

- 2.1 Carry out building surveying audit according to agreed audit criteria and workplace requirements.
- 2.2 Visually inspect building interior and exterior, note and document construction elements and obtain required photographic evidence.
- 2.3 Confirm and document actual use of building and check against compliance requirements.
- 2.4 Evaluate agreed elements of building against agreed criteria according to audit scope and limitations, and document non-compliances.

- 2.5 Note and document elements of the building that comply with NCC deemed-to-satisfy provisions.
 - 2.6 Document construction materials that pose a risk to health and safety and seek specialist advice to investigate and report on findings.
 - 3 Produce building surveying audit report.
 - 3.1 Prepare building surveying audit report specifying audit scope, purpose, limitations, assumptions and findings in the required format according to workplace requirements.
 - 3.2 Incorporate findings and recommendations obtained from specialist consultant.
 - 3.3 Incorporate details of any non-compliances, prioritised compliance strategies and associated cost estimates and timeframes to achieve compliance according to workplace requirements.
 - 3.4 Provide final building surveying audit report to relevant persons according to agreed compliance criteria and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to use specialised construction industry vocabulary when providing explanations and using questions to seek advice
- numeracy skills to interpret ratios, rates and proportions when examining drawings and documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6010 Conduct and report on building surveying audits of residential buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6110 Conduct and report on building surveying audits of Class 1 and 10 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6010 Conduct and report on building surveying audits of residential buildings up to three storeys.

New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting and reporting on three building surveying audits involving the following Classes of buildings as defined by the National Construction Code (NCC):

- two Class 1 buildings
- one Class 10 building excluding sheds and swimming pools.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- audit methodology and criteria
- content and format requirements for building surveying audit reports
- NCC classifications and definitions for Class 1 and 10 buildings:
 - building types
 - geographic and climate zones
- roles and responsibilities of specialist consultants in building surveying audits
- principles of negotiation and conflict resolution used to maintain professional relationships during building surveying audit processes
- processes for writing building surveying audit reports including using assumptions
- types of disciplines from which specialist advice may be sought
- typical purpose, scope and limitations of building surveying audits
- workplace requirements for conducting and reporting on building surveying audits:
 - equipment, including personal protective equipment (PPE)
 - reporting

- work health and safety (WHS).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to buildings, equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6111 Conduct and report on building surveying audits of Class 2 to 9 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6011 Conduct and report on building surveying audits of commercial buildings up to three storeys.

New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to audit buildings included in Classes 2 to 9 against the current requirements of the National Construction Code (NCC) and local planning policies. These Class 2 to 9 buildings are as defined in the NCC up to three storeys and not exceeding 2,000 square metres in floor area. The unit includes planning and conducting audit activities including visual inspections, noting structural elements and taking photographic evidence, and reporting audit findings and recommendations.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide advisory code-consulting services, carry out building surveying audits and advise on building compliance. Building surveying audits are required as part of a sales process to inform planned works or upgrades to existing commercial buildings, where advice on compliance requirements related to the proposed change of use of a commercial building or as part of an insurance assessment is required. The audit is primarily concerned with the compliance implications of the building.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---|-----|--|
| 1 | Scope and plan the building surveying audit. | 1.1 | Review building surveying audit application for building included in Classes 2 to 9 and related documentation to clarify property details and audit purpose. |
| | | 1.2 | Determine audit scope and limitations and negotiate agreed audit criteria with relevant persons. |
| | | 1.3 | Review relevant building plans and documentation prior to and during building surveying audit. |
| | | 1.4 | Confirm building ownership, classification and use, and contact owner or owner's corporation to arrange access to the building. |
| | | 1.5 | Research and identify compliance requirements for the building according to building classification, location, and potential change of use. |
| | | 1.6 | Obtain required equipment and apply work health and safety (WHS) requirements to audit activities according to workplace requirements. |
| | | 1.7 | Identify need for expert advice and engage relevant specialist consultant. |
| | | 1.8 | Consult with local planning authority and other relevant persons to confirm building compliance requirements and relevant planning permissions. |
| | | 1.9 | Document audit plan outlining audit schedule, scope and limitations and audit compliance criteria. |
| 2 | Conduct building surveying audit for building included in Classes 2 to 9. | 2.1 | Carry out building surveying audit according to agreed audit criteria and workplace requirements. |
| | | 2.2 | Visually inspect building interior and exterior, note and document construction elements and obtain required photographic evidence. |
| | | 2.3 | Confirm and document actual use of building and check against compliance requirements. |
| | | 2.4 | Evaluate agreed elements of building against agreed |

- criteria according to audit scope and limitations, and document non-compliances.
- 2.5 Note and document elements of the building that comply with NCC deemed-to-satisfy provisions.
- 2.6 Document construction materials that pose a risk to health and safety and seek specialist advice to investigate and report on findings.
- 3 Produce building surveying audit report.
- 3.1 Prepare building surveying audit report specifying audit scope, purpose, limitations, assumptions and findings in the required format according to workplace requirements.
- 3.2 Incorporate findings and recommendations obtained from specialist consultant.
- 3.3 Incorporate details of any non-compliances, prioritised compliance strategies and associated cost estimates and timeframes to achieve compliance according to workplace requirements.
- 3.4 Provide final building surveying audit report to relevant persons according to agreed compliance criteria and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to use specialised construction industry vocabulary when providing explanations and using questions to seek advice
- numeracy skills to interpret ratios, rates and proportions when examining drawings and documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6011 Conduct and report on building surveying audits of commercial buildings up to three storeys

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6111 Conduct and report on building surveying audits of Class 2 to 9 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6011 Conduct and report on building surveying audits of commercial buildings up to three storeys.

New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting and reporting on building surveying audits for three different projects involving the following Classes of buildings as defined by the National Construction Code (NCC):

- one project incorporating Class 5 or Class 6
- one project incorporating Class 2 or Class 3 or Class 9c
- one project incorporating Class 7 or Class 8.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- audit methodology and criteria
- content and format requirements for building surveying audit reports
- NCC classifications and definitions for buildings included in Classes 2 to 9:
 - building types
 - geographic and climate zones
- roles and responsibilities of specialist consultants in building surveying audits
- principles of negotiation and conflict resolution used to maintain professional relationships during building surveying audit processes
- processes for writing building surveying audit reports including using assumptions
- types of disciplines from which specialist advice may be sought
- typical purpose, scope and limitations of building surveying audits
- workplace requirements for conducting and reporting on building surveying audits:

- equipment, including personal protective equipment (PPE)
- reporting
- work health and safety (WHS).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to buildings, equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6112 Conduct and report on initial construction inspections of Class 1 and 10 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6012 Conduct and report on initial construction inspections of residential buildings up to three storeys.

New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to conduct and report on initial construction inspections to verify the compliance of site preparation, foundations, footings, framing and wet areas of Class 1 and 10 buildings, as defined in the National Construction Code (NCC), up to three storeys and not exceeding 2,000 square metres in floor area. The unit includes planning and conducting inspections, reporting on issues of non-compliance, and preparing certificates of compliance according to legislative and regulatory requirements.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to conduct mandated inspections of Class 1 and 10 buildings at the initial stage of construction. The certificate of compliance must be completed and processed before the next stage of construction can commence.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Identify and interpret compliance requirements for Class 1 or 10 building.	<p>1.1 Determine site classification and design wind speed for Class 1 or 10 building according to NCC definitions and building type, geographical location and climate zone.</p> <p>1.2 Access and interpret approved building design drawings and specifications and consult with relevant persons to confirm compliance of any variations from deemed-to-satisfy provisions.</p> <p>1.3 Identify and interpret compliance requirements for site preparation, foundations and footings, sub-floor ventilation, steel framing and structural steel members.</p> <p>1.4 Determine extreme weather events for the area and interpret compliance requirements for timber framing.</p> <p>1.5 Identify wall and substrate construction methods and materials and interpret compliance requirements for wet areas and waterproofing.</p>
2 Plan building inspection.	<p>2.1 Schedule inspection according to building and regulatory requirements and notify relevant persons.</p> <p>2.2 Record and report missed inspections as relevant according to regulatory requirements.</p> <p>2.3 Obtain equipment required for inspection according to workplace requirements.</p> <p>2.4 Apply work health and safety (WHS) requirements to planned inspection activities according to workplace requirements.</p>
3 Inspect and report compliance of Class 1 or 10 building.	<p>3.1 Conduct initial construction inspection of building according to regulatory and workplace requirements.</p> <p>3.2 Determine soil type and characteristics, effects on site stability and any required soil testing.</p> <p>3.3 Assess building features against compliance requirements and approved drawings for site preparation, foundations and footings, framing and wet areas.</p> <p>3.4 Document and report details of non-compliant features</p>

according to regulatory and workplace requirements.

- 3.5 Discuss non-compliant features of building with relevant persons and negotiate work required to remedy non-compliances according to workplace requirements.
- 3.6 Negotiate timeframe for remedial action and further inspection and report any failure to comply according to regulatory and workplace requirements.
- 3.7 Prepare and process certificate of compliance according to regulatory and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to use specialised construction industry vocabulary when exchanging technical information and negotiating remedial work
- numeracy skills to measure and calculate dimensions.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6012 Conduct and report on initial construction inspections of residential buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6112 Conduct and report on initial construction inspections of Class 1 and 10 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6012 Conduct and report on initial construction inspections of residential buildings up to three storeys.

New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting and reporting on three initial construction inspections involving the following Classes of buildings as defined by the National Construction Code (NCC):

- two Class 1 buildings
- one Class 10 building excluding sheds and swimming pools.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- legislative and regulatory compliance requirements for site preparation, foundations, footings, framing and wet areas of Class 1 and 10 buildings at the initial stage of construction:
 - building control legislation and regulations
 - NCC including referenced Australian Standards to meet deemed-to-satisfy provisions and/or performance solutions:
 - stormwater drainage and connections to street gutter and easements
 - excavations, filling under concrete slabs and pest risk management
 - sub-floor ventilation
 - steel framing and structural steel members:
 - corrosion protection
 - National Association of Steel-Framed Housing (NASH) standards
 - service penetrations

- timber framing:
 - high wind areas
 - specific requirements for use in conjunction with concrete floors, steel members and timber species scheduled for structural use
- waterproofing.
- methods for determining site classification and design wind speed
- methods for identifying soil types and characteristics and effects on site stability including the potential for:
 - collapsing soil
 - ground movement due to moisture change
 - land slips
 - mine subsidence
 - soil erosion
- NCC classifications and definitions for Class 1 and 10 buildings:
 - building types
 - geographic and climate zones
- principles of negotiation and conflict resolution used to maintain professional relationships during building inspection and reporting processes
- workplace requirements for conducting and reporting on initial construction inspections of Class 1 and 10 buildings:
 - equipment, including personal protective equipment (PPE)
 - reporting
 - work health and safety (WHS).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to buildings, equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6113 Conduct and report on initial construction inspections of Class 2 to 9 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6013 Conduct and report on initial construction inspections of commercial buildings up to three storeys.
- New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to conduct and report on initial construction inspections to verify the compliance of site preparation, foundations, footings, structural provisions and wet areas of buildings included in Classes 2 to 9, as defined in the National Construction Code (NCC), up to three storeys and not exceeding 2,000 square metres in floor area. The unit includes planning and conducting inspections, reporting on issues of non-compliance, and preparing certificates of compliance according to legislative and regulatory requirements.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to conduct mandated inspections of buildings included in Class 2 to 9 at the initial stage of construction. The certificate of compliance must be completed and processed before the next stage of construction can commence.

At the time of publication, this unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Identify and interpret compliance requirements for building included in Classes 2 to 9.
 - 1.1 Determine site classification and design wind speed for building included in Classes 2 to 9 according to NCC definitions and building type, geographical location and climate zone.
 - 1.2 Access and interpret approved building design drawings and specifications and consult with relevant persons to confirm compliance of any variations from deemed-to-satisfy provisions.
 - 1.3 Identify and interpret compliance requirements for site preparation, foundations and footings and structural provisions.
 - 1.4 Determine extreme weather events for the area and interpret compliance requirements for structural provisions.
 - 1.5 Identify wall and substrate construction methods and materials and interpret compliance requirements for wet areas and waterproofing.
 - 1.6 Identify wall and substrate construction methods and materials and interpret compliance requirements for wet areas and waterproofing.
 - 2 Plan building inspection.
 - 2.1 Schedule inspection according to building and regulatory requirements and notify relevant persons.
 - 2.2 Record and report missed inspections as relevant according to regulatory requirements.
 - 2.3 Obtain equipment required for inspection according to workplace requirements.
 - 2.4 Apply work health and safety (WHS) requirements to planned inspection activities according to workplace requirements.
 - 3 Inspect and report compliance of building included in Classes 2 to 9.
 - 3.1 Conduct initial construction inspection of building according to regulatory and workplace requirements.
 - 3.2 Determine soil type and characteristics, effects on site stability and any required soil testing.

- 3.3 Assess building features against compliance requirements and approved drawings for site preparation, foundations and footings, structural provisions and wet areas.
- 3.4 Document and report details of non-compliant features according to regulatory and workplace requirements.
- 3.5 Discuss non-compliant features of building with relevant persons and negotiate work required to remedy non-compliances according to workplace requirements.
- 3.6 Negotiate timeframe for remedial action and further inspection and report any failure to comply according to regulatory and workplace requirements.
- 3.7 Prepare and process certificate of compliance according to regulatory and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to use specialised construction industry vocabulary when exchanging technical information and negotiating remedial work
- numeracy skills to measure and calculate dimensions.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6013 Conduct and report on initial construction inspections of commercial buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6113 Conduct and report on initial construction inspections of Class 2 to 9 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6013 Conduct and report on initial construction inspections of commercial buildings up to three storeys.
- New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting and reporting on initial construction inspections for three projects involving the following Classes of buildings as defined by the National Construction Code (NCC):

- one project incorporating Class 5 or Class 6
- one project incorporating Class 2 or Class 3 or Class 9c
- one project incorporating Class 7 or Class 8.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- legislative and regulatory compliance requirements for site preparation, foundations, footings, framing and wet areas of Class 2 to 9 buildings at the initial stage of construction:
 - building control legislation and regulations
 - NCC including referenced Australian Standards to meet deemed-to-satisfy provisions and/or performance solutions:
 - excavations, filling under concrete slabs and pest risk management
 - structural provisions:
 - aluminium
 - composite steel and concrete
 - concrete, including tilt-up panel construction
 - glazed assemblies

- masonry
- roofs
- steel
- timber
- waterproofing
- methods for determining site classification and design wind speed
- methods for identifying soil types and characteristics and effects on site stability including the potential for:
 - collapsing soil
 - ground movement due to moisture change
 - land slips
 - mine subsidence
 - soil erosion
- NCC classifications and definitions for buildings included in Classes 2 to 9:
 - building types
 - geographic and climate zones
- principles of negotiation and conflict resolution used to maintain professional relationships during building inspection and reporting processes
- workplace requirements for conducting and reporting on initial construction inspections of Class 2 to 9 buildings:
 - equipment, including personal protective equipment (PPE)
 - reporting
 - work health and safety (WHS).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to buildings, equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6114 Conduct and report on advanced and final inspections of Class 1 and 10 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6014 Conduct and report on advanced and final inspections of residential buildings up to three storeys.
- New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to conduct and report on advanced and final inspections that occur after constructing the structural elements of Class 1 and 10 buildings. Class 1 and 10 buildings are as defined in the National Construction Code (NCC) up to three storeys and not exceeding 2,000 square metres in floor area. The unit includes planning and conducting inspections, reporting on issues of non-compliance, preparing certificates of compliance and issuing occupancy permissions according to legislative and regulatory requirements.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to conduct mandated inspections of Class 1 and 10 buildings at the advanced and final stages of construction. Inspections are those specified in the building approval documentation for the project including the final inspection required prior to issuing occupancy permission.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Interpret compliance requirements for Class 1 or 10 building. | 1.1 Access and interpret approved building design drawings and specifications and consult with relevant persons to confirm compliance of any variations from deemed-to-satisfy provisions. |
| | 1.2 Assess building features detailed in approved drawings to check compliance with NCC and regulatory requirements. |
| 2 Plan building inspections. | 2.1 Review building approval documentation to identify requirements for specific additional inspections. |
| | 2.2 Identify need for expert advice and engage relevant specialist consultant. |
| | 2.3 Obtain required equipment to inspect building and apply work health and safety (WHS) requirements to inspection activities according to workplace requirements. |
| | 2.4 Schedule advanced and final inspections according to building and regulatory requirements and notify relevant persons. |
| 3 Inspect and report compliance of Class 1 or 10 building. | 3.1 Conduct advanced and final inspections of building according to regulatory and workplace requirements. |
| | 3.2 Assess building features against compliance requirements and approved drawings. |
| | 3.3 Document and report details of non-compliant features according to regulatory and workplace requirements. |
| | 3.4 Discuss non-compliant features of building with relevant persons and negotiate work required to remedy non-compliances according to workplace requirements. |
| | 3.5 Negotiate timeframe for remedial action and further inspection and report any failure to comply according to regulatory and workplace requirements. |

- 3.6 Prepare and process certificate of compliance and issue occupancy permission according to regulatory and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to use specialised construction industry vocabulary when exchanging technical information and negotiating remedial work
- numeracy skills to measure and calculate dimensions.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6014 Conduct and report on advanced and final inspections of residential buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6114 Conduct and report on advanced and final inspections of Class 1 and 10 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6014 Conduct and report on advanced and final inspections of residential buildings up to three storeys.
- New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting and reporting on three advanced and final inspections involving the following Classes of buildings as defined by the National Construction Code (NCC):

- two Class 1 buildings
- one Class 10 building excluding sheds and swimming pools.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

For each building, the candidate must assess and confirm the compliance of the following building features against approved drawings, NCC and regulatory requirements:

- building roof and wall cladding
- glazing
- fire safety
- health and amenity
- safe movement and access
- energy efficiency.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- legislative and regulatory compliance requirements for roof and wall cladding, glazing, fire safety, health and amenity, safe movement and access, and energy efficiency of Class 1 and 10 buildings at the advanced and final stages of construction:
 - building control legislation and regulations
 - NCC including referenced Australian Standards to meet deemed-to-satisfy provisions and/or performance solutions:

- roof and wall cladding including gutters and downpipes
- glazing
- fire safety:
 - alpine locations
 - bushfire locations
 - fire separation
 - heating appliances
- health and amenity:
 - facilities
 - light
 - room heights
 - sound insulation
 - ventilation
 - waterproofing of wet areas
- safe movement and access:
 - balustrades
 - stair construction
 - swimming pool access
- energy efficiency:
 - air movement
 - building: fabric and sealing
 - external glazing
 - services
- NCC classifications and definitions for Class 1 and 10 buildings:
 - building types
 - geographic and climate zones
- principles of negotiation and conflict resolution used to maintain professional relationships during building inspection and reporting processes
- workplace requirements for conducting and reporting on advanced and final construction inspections of Class 1 and 10 buildings:
 - equipment, including personal protective equipment (PPE)
 - reporting
 - work health and safety (WHS).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to buildings, equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6115 Conduct and report on advanced and final inspections of Class 2 to 9 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6015 Conduct and report on advanced and final inspections of commercial buildings up to three storeys.
- New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to conduct and report on advanced and final inspections that occur after constructing the structural elements of commercial buildings included in Classes 2 to 9, as defined in the National Construction Code (NCC), up to three storeys and not exceeding 2,000 square metres in floor area. The unit includes planning and conducting inspections, reporting on issues of non-compliance, preparing certificates of compliance and issuing occupancy permissions according to legislative and regulatory requirements.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to conduct mandated inspections of buildings included in Class 2 to 9 at the advanced and final stages of construction. Inspections are those specified in the building approval documentation for the project including the final inspection required prior to issuing occupancy permission.

At the time of publication, this unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Interpret compliance requirements for building included in Class 2 to 9. | 1.1 Access and interpret approved building design drawings and specifications for building and consult with relevant persons to confirm compliance of any variations from deemed-to-satisfy provisions. |
| | 1.2 Assess building features detailed in approved drawings to check compliance with NCC and regulatory requirements. |
| 2 Plan building inspections. | 2.1 Review building approval documentation to identify requirements for specific additional inspections. |
| | 2.2 Identify need for expert advice and engage relevant specialist consultant. |
| | 2.3 Obtain required equipment to inspect building and apply work health and safety (WHS) requirements to inspection activities according to workplace requirements. |
| | 2.4 Schedule advanced and final inspections according to building and regulatory requirements and notify relevant persons. |
| 3 Inspect and report compliance of building included in Class 2 to 9. | 3.1 Conduct advanced and final inspection of building according to regulatory and workplace requirements. |
| | 3.2 Assess building features against compliance requirements and approved drawings. |
| | 3.3 Document and report details of non-compliant features according to regulatory and workplace requirements. |
| | 3.4 Discuss non-compliant features of building with relevant persons and negotiate work required to remedy non-compliances according to workplace requirements. |
| | 3.5 Negotiate timeframe for remedial action and further inspection and report any failure to comply according to regulatory and workplace requirements. |

- 3.6 Prepare and process certificate of compliance and issue occupancy permission according to regulatory and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to use specialised construction industry vocabulary when exchanging technical information and negotiating remedial work
- numeracy skills to measure and calculate dimensions.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6015 Conduct and report on advanced and final inspections of commercial buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6115 Conduct and report on advanced and final inspections of Class 2 to 9 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6015 Conduct and report on advanced and final inspections of commercial buildings up to three storeys.
- New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting and reporting on advanced and final inspections for three projects involving the following Classes of buildings as defined by the National Construction Code (NCC):

- one project incorporating Class 5 or Class 6
- one project incorporating Class 2 or Class 3 or Class 9c
- one project incorporating Class 7 or Class 8.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

For each project, the candidate must assess and confirm the compliance of the following building features against approved drawings, NCC and regulatory requirements:

- access and egress
- services and equipment
- health and amenity
- ancillary provisions
- energy efficiency.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- legislative and regulatory compliance requirements for fire resistance, access and egress, services and equipment, health and amenity, ancillary provisions, safe movement and access, and energy efficiency of Class 2 to 9 buildings at the advanced and final stages of construction in different climate zones and geographic locations:
 - building control legislation and regulations

- NCC including referenced Australian Standards to meet deemed-to-satisfy provisions and/or performance solutions:
 - fire resistance:
 - fire resistance and stability
 - compartmentation and separation and protection of openings
 - access and egress:
 - provisions for escape
 - construction of exits
 - access for people with disabilities
 - services and equipment:
 - emergency lighting
 - exit signs and warning systems
 - fire suppression and detection equipment
 - lift installations
 - smoke hazard management
 - health and amenity:
 - damp and weather proofing
 - light and ventilation
 - room sizes
 - sanitary or other facilities
 - sound transmission and insulation
 - waterproofing of wet areas
 - ancillary provisions:
 - construction in bushfire prone areas
 - heating appliances, fireplaces, chimneys and flues
 - minor structures and components
 - energy efficiency:
 - access for maintenance
 - air movement
 - air conditioning and ventilation systems
 - artificial lighting and power
 - building: fabric and sealing
 - external glazing
 - hot water supply
- NCC classifications and definitions for buildings included in Classes 2 to 9:
 - building types
 - geographic and climate zones
- principles of negotiation and conflict resolution used to maintain professional relationships during building inspection and reporting processes

- workplace requirements for conducting and reporting on advanced and final construction inspections of Class 1 and 10 buildings:
 - equipment, including personal protective equipment (PPE)
 - reporting
 - work health and safety (WHS).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to buildings, equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6116 Assess and advise on performance solutions for Class 2 to 9 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6016 Assess and advise on performance-based solutions for buildings up to three storeys.

New prerequisite requirement.

Application

This unit of competency specifies the skills and knowledge required to advise on the application of National Construction Code (NCC) requirements for performance solutions for buildings in Classes 2 to 9 up to three storeys and not exceeding 2,000 square metres in floor area, and to apply approved assessment methods to determine whether a proposed solution is compliant. It includes assessing architectural drawings and specifications for performance solutions and analysing them in relation to the relevant sections of the NCC and the Plumbing Code of Australia (PCA).

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide advice to architects and building designers on compliance requirements and options for performance solutions, or act in the statutory role with responsibility for assessing and certifying compliance of performance solutions. Under legislation building surveyors are responsible for ensuring that there is no conflict of interest between the two roles. Building surveyors cannot advise on, and then certify, the same performance solution.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Determine building surveying service requirements.	1.1 Obtain architectural drawings and specifications and identify performance solutions to be advised on or certified.
	1.2 Clarify requirement for performance solution in consultation with relevant persons.
	1.3 Negotiate and confirm building surveying services to advise on or certify performance solutions and agree on timelines and costs where relevant.
2 Analyse performance requirements of performance solution for building included in Classes 2 to 9.	2.1 Assess performance solution for building to clarify its regulatory intent.
	2.2 Identify performance requirements and confirm level of performance applied to the performance solution.
3 Determine assessment requirements for performance solution for building included in Classes 2 to 9.	3.1 Interpret NCC requirements and specifications for the material, form of construction or design of performance solution for building.
	3.2 Determine NCC assessment methods that may be applied to performance solution.
	3.3 Determine and negotiate requirements for services of technical experts qualified to provide evidence or expert judgement in relation to performance solution.
4 Analyse performance solution for building included in Classes 2 to 9.	4.1 Analyse compliance of performance solution in consultation with relevant persons.
	4.2 Apply principles of fire safety engineering to compliance analysis of performance solution for fire safety.
	4.3 Apply design principles to compliance analysis of performance solution for structural safety, health, amenity and sustainability.
	4.4 Determine and record strengths and weaknesses of

performance solution.

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| 5 Advise on performance solution. | 5.1 Explain assessment requirements for performance solution to client and invite and address questions. |
| | 5.2 Evaluate strengths and weaknesses of proposed performance solutions in consultation with client. |
| | 5.3 Develop optional performance solutions in consultation with client. |
| | 5.4 Assist client to select preferred performance solution. |
| | 5.5 Evaluate verification methods and evidence or expertise to support performance solution and explain findings to client. |
| | 5.6 Gather documentation for performance solution and prepare to submit for assessment. |
| 6 Assess compliance of performance solution. | 6.1 Review documentation for performance solution to ensure completeness and request further information as required. |
| | 6.2 Analyse and evaluate verification information supplied to support performance solution. |
| | 6.3 Analyse and evaluate evidence or expert judgment to support performance solution. |
| | 6.4 Determine and document compliance of performance solution according to regulatory and workplace requirements. |
| | 6.5 Process documentation and notify client of assessment outcome according to regulatory and workplace requirements. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to interpret ratios, rates and proportions when examining drawings and documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6016 Assess and advise on performance-based solutions for buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6116 Assess and advise on performance solutions for Class 2 to 9 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Supersedes and is not equivalent to CPCCBS6016 Assess and advise on performance-based solutions for buildings up to three storeys.

New prerequisite requirement.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by assessing, advising on, and certifying as compliant a total of three performance solutions for projects that include the following Classes of buildings as defined by the National Construction Code (NCC):

- one project incorporating Class 5 or Class 6
- one project incorporating Class 2 or Class 3 or Class 9c
- one project incorporating Class 7 or Class 8.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

Of the three performance solutions:

- one must be a performance solution for fire safety
- two must be performance solutions for structural safety, health, amenity and sustainability.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- design principles that are applied when analysing the compliance of performance solutions for structural safety, health, amenity and sustainability:
 - access and egress, including access for people with a disability
 - damp and weatherproofing
 - energy efficiency
 - light and ventilation
 - room heights

- sanitary and other facilities
- services and equipment
- sound transmission and insulation
- structural safety
- NCC classifications and definitions for buildings included in Classes 2 to 9:
 - building types
 - geographic and climate zones
- NCC requirements for assessing performance solutions relevant to buildings included in Classes 2 to 9
- principles of fire safety engineering relevant to buildings included in Classes 2 to 9:
 - characteristics of building materials in relation to fire
 - fire-modelling
 - fire science:
 - fire behaviour and dynamics
 - impact of fire on structures and materials
 - products of combustion
 - fire control strategies
 - fire retardants
 - fire detection technologies
 - fire suppression technologies
 - fire containment
 - human response to fire
 - interconnection of fire systems, including cause and effect matrix
 - interaction with other services
- project management strategies that ensure thorough and timely advice is delivered according to service level agreement
- regulatory intent of performance solutions
- scope and limitations of building surveyor role in relation to advising on or certifying performance solutions
- workplace requirements for assessing and advising on performance solutions for buildings included in Classes 2 to 9:
 - client service
 - documentation and reporting.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or

- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6117 Monitor and advise on construction and compliance upgrade work on buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6017 Monitor and advise on construction and compliance upgrade work on buildings up to three storeys.
- New prerequisite requirements.

Application

This unit of competency specifies the skills and knowledge required to monitor construction work and provide advice to clients on meeting compliance requirements for construction work on both new and existing buildings of all classes as defined in the National Construction Code (NCC) up to three storeys. It involves arranging and conducting site visits during construction.

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide consultancy services during the construction phase of a project and who assist in finding solutions to problems, including construction faults and compliance issues.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

- CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys
- CPCCBS6102 Research and evaluate construction methods and materials for Class 2 to 9 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and manage construction monitoring and advisory services. | 1.1 Identify and confirm scope and nature of construction monitoring services, required client advice, and timelines, fees and details of services to be offered at different project stages. |
| | 1.2 Schedule site visits according to project and regulatory requirements and notify relevant persons. |
| | 1.3 Obtain required equipment for site visit according to work health and safety (WHS) and workplace requirements. |
| | 1.4 Plan and monitor project management processes to ensure accurate and timely advice is provided within the scope of specified service levels. |
| | 1.5 Obtain project documentation and analyse approved designs, compliance requirements, construction methods and specified materials. |
| | 1.6 Identify and monitor file management processes according to workplace requirements. |
| 2 Identify and advise on construction faults. | 2.1 Monitor construction work according to agreed schedule and assess against approved designs, specifications and compliance requirements. |
| | 2.2 Identify and document faults in construction work in consultation with relevant persons according to project and workplace requirements. |
| | 2.3 Develop and evaluate options for rectifying construction faults in consultation with relevant persons. |
| | 2.4 Assess rectification work to ensure it meets compliance requirements, complete assessment documentation and provide to client according to project and workplace requirements. |
| 3 Advise on construction | 3.1 Provide advice to relevant persons to clarify interpretation of compliance requirements, working |

- problems. drawings and specifications according to agreed service levels.
- 3.2 Analyse problems arising during construction work in consultation with relevant persons according to project and workplace requirements.
 - 3.3 Develop and evaluate solutions to construction problems in consultation with relevant persons.
 - 3.4 Develop detailed sketches and notes relating to solutions to construction problems and provide to relevant persons according to project and workplace requirements.
- 4 Report on construction and compliance upgrade work.
- 4.1 Collate and review drawings and documentation from different site visits to construction project site.
 - 4.2 Report details of monitoring and advisory services to the construction project including faults and problems addressed.
 - 4.3 Present report to client and invite and address questions to clarify findings.
 - 4.4 Report and process solutions to construction faults and problems relevant to future projects according to workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to interpret ratios, rates and proportions when examining drawings and documentation.

Unit Mapping Information

Supersedes and is not equivalent to CPCCBS6017 Monitor and advise on construction and compliance upgrade work on buildings up to three storeys.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6117 Monitor and advise on construction and compliance upgrade work on buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
- Supersedes and is not equivalent to CPCCBS6017 Monitor and advise on construction and compliance upgrade work on buildings up to three storeys.
- New prerequisite requirements.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by monitoring and advising on construction and compliance upgrade work for three projects involving buildings up to three storeys in the following Classes as defined by the National Construction Code (NCC):

- one project incorporating a Class 1 building
- two projects selected from:
 - a project incorporating buildings in Class 5 or Class 6
 - a project incorporating buildings in Class 2 or Class 3 or Class 9c
 - a project incorporating buildings in Class 7 or Class 8.

For each project, the person must:

- develop and evaluate two options for rectifying a construction fault
- provide solutions for two different construction problems.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- legislative and regulatory compliance requirements for critical stage inspections relating to buildings at the site preparation, foundations and footings and framing stages of construction in different climate zones and geographic locations:
 - building control legislation and regulations
 - NCC including referenced Australian Standards to meet deemed-to-satisfy provisions and/or performance solutions
- NCC classifications and definitions for all Classes of buildings
- regulatory constraints that govern the relationship between the advisory and statutory roles of building surveyors

- workplace requirements for monitoring and advising on construction and compliance upgrade work on buildings:
 - equipment, including personal protective equipment (PPE)
 - file management
 - reporting
 - work health and safety (WHS) associated with site inspections.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to buildings, equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCBS6118 Assess and advise on performance solutions for Class 1 and 10 buildings to three storeys

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to advise on the application of National Construction Code (NCC) requirements for performance solutions for Class 1 and 10 buildings up to three storeys and not exceeding 2,000 square metres in floor area, and to apply approved assessment methods to determine whether a proposed solution is compliant. It includes assessing architectural drawings and specifications for performance solutions and analysing them in relation to the relevant sections of the NCC and the Plumbing Code of Australia (PCA).

This unit is suitable for building surveyors who draw on their broad theoretical knowledge and technical skills to provide advice to architects and building designers on compliance requirements and options for performance solutions, or act in the statutory role with responsibility for assessing and certifying compliance of performance solutions. Under legislation building surveyors are responsible for ensuring that there is no conflict of interest between the two roles. Building surveyors cannot advise on, and then certify, the same performance solution.

This unit forms part of the licensing requirements for building surveying in some states and territories. Relevant state and territory regulatory authorities should be consulted to clarify these requirements.

Pre-requisite Unit

CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys.

Unit Sector

Building surveying

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Determine building surveying service requirements	1.1 Obtain architectural drawings and specifications and identify performance solutions to be advised on or certified. 1.2 Clarify requirement for performance solution in consultation with relevant persons. 1.3 Negotiate and confirm building surveying services to advise on or certify performance solutions and agree on timelines and costs where relevant.
2 Analyse performance requirements of performance solution for Class 1 or 10 building.	2.1 Assess performance solution for building to clarify its regulatory intent. 2.2 Identify performance requirements and confirm level of performance applied to the performance solution.
3 Determine assessment requirements for performance solution for Class 1 or 10 building.	3.1 Interpret NCC requirements and specifications for the material, form of construction or design of performance solution for Class 1 or 10 building. 3.2 Determine NCC assessment methods that may be applied to performance solution. 3.3 Determine and negotiate requirements for services of technical experts qualified to provide evidence or expert judgement in relation to performance solution.
4 Analyse performance solution for Class 1 or 10 building.	4.1 Analyse compliance of performance solution in consultation with relevant persons. 4.2 Apply principles of fire safety engineering to compliance analysis of performance solution for fire safety. 4.3 Apply design principles to compliance analysis of performance solution for structural safety, health, amenity and sustainability. 4.4 Determine and record strengths and weaknesses of performance solution.

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| 5 Advise on performance solution. | 5.1 Explain assessment requirements for performance solution to client and invite and address questions. |
| | 5.2 Evaluate strengths and weaknesses of proposed performance solutions in consultation with client. |
| | 5.3 Develop optional performance solutions in consultation with client. |
| | 5.4 Assist client to select preferred performance solution. |
| | 5.5 Evaluate verification methods and evidence or expertise to support performance solution and explain findings to client. |
| | 5.6 Gather documentation for performance solution and prepare to submit for assessment. |
| 6 Assess compliance of performance solution. | 6.1 Review documentation for performance solution to ensure completeness and request further information as required. |
| | 6.2 Analyse and evaluate verification information supplied to support performance solution. |
| | 6.3 Analyse and evaluate evidence or expert judgment to support performance solution. |
| | 6.4 Determine and document compliance of performance solution according to regulatory and workplace requirements. |
| | 6.5 Process documentation and notify client of assessment outcome according to regulatory and workplace requirements. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to interpret ratios, rates and proportions when examining drawings and documentation.

Unit Mapping Information

No equivalent unit

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCBS6118 Assess and advise on performance solutions for Class 1 and 10 buildings to three storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by assessing, advising on and certifying as compliant a total of three performance solutions involving the following Classes of buildings as defined by the National Construction Code (NCC):

- two Class 1 buildings
- one Class 10 building excluding sheds and swimming pools.

Each building must be up to three storeys and not exceeding 2,000 square metres in floor area, and in a different geographical location as defined by the NCC.

Of the three performance solutions:

- one must be a performance solution for fire safety
- two must be performance solutions for structural safety, health, amenity and sustainability.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- design principles that are applied when analysing the compliance of performance solutions for structural safety, health, amenity and sustainability:
 - access and egress, including access for people with a disability
 - damp and weatherproofing
 - energy efficiency
 - light and ventilation
 - room heights
 - sanitary and other facilities
 - services and equipment
 - sound transmission and insulation

- structural safety
- NCC classifications and definitions for Class 1 and 10 buildings:
 - building types
 - geographic and climate zones
- NCC requirements for assessing performance solutions relevant to Class 1 and 10 buildings
- principles of fire safety engineering relevant to Class 1 and 10 buildings:
 - fire retardants for buildings in bushfire prone areas
 - purpose and scope of AS 3959 *Construction of buildings in bushfire-prone areas*
- project management strategies that ensure thorough and timely advice is delivered according to service level agreement
- regulatory intent of performance solutions
- scope and limitations of building surveyor role in relation to advising on or certifying performance solutions
- workplace requirements for assessing and advising on performance solutions for Class 1 and 10 buildings:
 - client service
 - documentation and reporting.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessors must also:

- be licensed as a Building Surveyor Level 1 (or equivalent) or Level 2 (or equivalent) in their state or territory, or
- demonstrate current membership of a relevant industry association and have current registration on the National Building Professionals Register in the Building Industry Control category (level 1), or
- be accredited under the Australian Institute of Building Surveyors (AIBS) National Accreditation Scheme at Building Surveyor level or be accredited by the Royal Institute of Chartered Surveyors as a building certifier.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to equipment, software, drawings, documentation and materials required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA2002 Use carpentry tools and equipment

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA2002B Use carpentry tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to select and safely use and maintain carpentry tools and equipment, meeting all relevant requirements of national construction codes, Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes hand tools, power tools, pneumatic tools and equipment.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare. | 1.1 Review work instructions to use tools and equipment. |
| | 1.2 Plan all work to comply with laws and regulations, national construction codes, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements. |
| | 1.3 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.4 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades. |
| 2 Select, check and use tools and equipment. | 2.1 Select equipment and hand, power and pneumatic tools for the carpentry task, identify their functions and operations, check for serviceability and report any faults. |
| | 2.2 Use equipment and hand, power and pneumatic tools following WHS requirements and manufacturers' recommendations. |
| | 2.3 Sharpen and maintain tools. |
| 3 Clean up. | 3.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | 3.2 Check, maintain, store and secure tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA2002B Use carpentry tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA2002 Use carpentry tools and equipment

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA2002B Use carpentry tools and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must safely and effectively, across three different carpentry tasks, use and maintain all of the listed tools and equipment at least once:

- hand tools:
 - retractable tape measure
 - folding or steel ruler
 - combination square
 - string line
 - chalk line
 - hand saw
 - coping saw
 - carpenters hammer / claw hammer
 - wood chisel
 - hand plane
 - trimming knife
 - clamps
 - bevels
 - spirit level
 - tin snips
- power/battery/pneumatic tools and equipment:
 - circular saw
 - reciprocating saw
 - sliding compound saw

- jigsaw
- angle grinder
- planer
- laminate trimmer or router
- drill
- rotary hammer drill
- impact driver
- nail gun
- bench grinder
- extension lead
- portable residual current device
- air compressor and hoses.

The candidate must also:

- replace blades/cutters/grinding discs in:
 - a power saw
 - a powered planer
 - a router
 - grinder
- grind, sharpen and hone a hand plane blade
- grind, sharpen and hone a chisel.
-

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace quality policies and standards for using carpentry tools and equipment
- safety requirements for using carpentry tools and equipment
- types of tools and equipment and their characteristics, uses and limitations:
 - hand tools including:
 - retractable tape measure
 - folding or steel ruler
 - combination square
 - spirit level
 - string line
 - chalk line
 - hand saw
 - coping saw
 - carpenters hammer/claw hammer
 - wood chisel
 - hand plane

- metal trimming knife
- clamp
- bevel
- tin snips
- power/battery/pneumatic tools and equipment:
 - bench grinder
 - circular saw
 - reciprocating saw
 - sliding compound saw
 - jigsaw
 - angle grinder
 - mobile plane
 - laminate trimmer or router
 - drill
 - rotary hammer drill
 - impact driver
 - nail gun
 - extension lead
 - portable residual current device
 - air compressor and hoses
- processes to safely grind, sharpen and hone a hand plane blade and a chisel.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA2011 Handle carpentry materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA2011A Handle carpentry materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to safely manually handle and store carpentry materials, meeting all relevant requirements of work health and safety (WHS) and Commonwealth and state or territory legislation.

The unit includes preparing material for mechanical handling and applying environmental management principles associated with carpentry materials.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.	1.1 Read and interpret work instructions and plan sequence
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- of work.
- 1.2 Plan all work to comply with laws and regulations, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
- 2 Manually handle, sort, stack and store materials.
 - 2.1 Apply safe manual handling techniques to move carpentry materials to specified location.
 - 2.2 Sort carpentry materials to suit material type and size, and stack clear of access ways for ease of identification, retrieval, task sequence and task location.
 - 2.3 Protect carpentry materials against physical and water damage.
- 3 Prepare for mechanical handling of materials.
 - 3.1 Stack and secure carpentry materials for mechanical handling in accordance with the type of material and equipment to be used.
 - 3.2 Unload, move or locate carpentry materials at specified location.
- 4 Check and store tools and equipment.
 - 4.1 Check, tools and equipment and report any faults.
 - 4.2 Store tools and equipment in accordance with workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA2011A Handle carpentry materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA2011 Handle carpentry materials

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCA2011A Handle carpentry materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by handling carpentry materials for three different carpentry tasks, including:

- safely handling, sorting and stacking:
 - varying lengths of timber or similarly-proportioned materials onto an Australian standard pallet, a minimum of 0.5 cubic metres, secured ready for mechanical handling
 - different sizes and types of sheet material onto an Australian standard pallet, a minimum of 0.1 cubic metres, secured ready for mechanical handling
- preparing the following for mechanical handling:
 - varying lengths of timber or similarly-proportioned materials
 - different sizes and types of sheet material.
 -

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Commonwealth and state or territory work health and safety (WHS) legislation relevant to handling carpentry materials
- safety data sheets
- workplace quality policies and standards for handling carpentry materials
- safety requirements for handling carpentry materials
- methods of securing materials
- types and uses of tools and equipment for handling carpentry materials:
 - hammers
 - pallets
 - pinch bars
 - tin snips
 - wheelbarrows

- requirements and processes for safely preparing the following materials for mechanical handling, and manual handling, sorting, and stacking:
 - concrete components
 - insulation
 - joinery units
 - metal sheeting
 - paints and sealants
 - plaster or fibre cement sheeting
 - reconstituted timber products
 - reinforcement materials
 - scaffolding components
 - structural steel sections and components
 - timber
- methods of handling carpentry materials:
 - material size, weight or shape factors necessitating the assistance of other workers
 - correct lifting and carrying techniques, use of pallets and control of waste
 - preparation for mechanical handling, including the use of forklifts, pallet jacks and trucks.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3002 Carry out setting out

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3002A Carry out setting out. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to identify perimeter site boundaries and survey indicators to establish, measure and set up profiled set-outs for buildings and structural components of building work, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes setting out pads, posts, slabs, strips, and stumps and installing string lines to profile the footings of a building and associated structures on a site.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.	1.1 Read and interpret work instructions and plan sequence
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- of work.
- 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
- 2 Show site boundaries.
- 2.1 Locate survey pegs at corners of site.
 - 2.2 Set string lines to accurately show site boundary markings in accordance with site drawings and survey pegs.
- 3 Set out first line for building alignment.
- 3.1 Determine, from drawings, the distance of the building line from the boundary or existing building.
 - 3.2 Determine approximate position and length of line and building clearances at each end from drawings and survey pegs.
 - 3.3 Install pegs and profiles, ensuring that they are level across and between one another and have adequate provision to mark footing width on profile.
 - 3.4 Accurately mark location for line with nails on profiles and set taut string line to true alignment with boundary.
- 4 Set out right-angled corners.
- 4.1 Determine and mark corner of building with peg on set building line to true measurement from adjacent boundary.
 - 4.2 Use triangulation principles to set up right angle to line from corner peg.

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| | 4.3 | Install profiles to approximate level of other profiles and set taut string line to right-angled alignment. |
| 5 Install other building lines. | 5.1 | Install profiles for remaining building lines level with established profiles. |
| | 5.2 | Mark measurements for remaining building lines accurately, and nail on profiles to dimensions from drawings. |
| | 5.3 | Set taut string lines to nailed locations on profiles. |
| 6 Check building lines for square. | 6.1 | Check diagonal measurements for square and adjust lines to provide square relationship within 3 mm tolerance over minimum diagonal length of 10 m. |
| | 6.2 | Check measurements for accuracy. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3002A Carry out setting out.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3002 Carry out setting out

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3002A Carry out setting out. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by setting out one L- and one T-shape building on a site with fall.

Setting out must be to 3 mm tolerance over minimum diagonal length of 10 metres, and include pads, slabs, strips and piers.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards relevant to carrying out setting out
- workplace quality policies and standards for carrying-out setting-out
- safety requirements for carrying out setting out
- application and requirements for line, level and plumb in construction projects
- mathematical techniques associated with setting out
- processes for reading and interpreting construction plans, drawings and sketches when carrying out setting out of pads, slabs, strips and piers
- processes and techniques for accurate setting-out on flat, sloping and steep sites
- processes for setting-out
- site isolation responsibilities when carrying out setting out
- types, characteristics, technical capabilities and limitations of devices used to carry out setting out activities.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3003 Install flooring systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3002A Carry out setting out. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to plan, prepare, set out and install timber and steel flooring systems to support the internal and external walls of a residential building, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation and National Association of Steel-Framed Housing (NASH) standard for steel-framed construction in bushfire areas.

The unit includes installation of flooring systems in bedrooms, living areas, kitchens, bathrooms, balconies and decks.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Set out and install support structure.
 - 2.1 Position support structure, stumps/piers to set-out lines, drawings and specifications.
 - 2.2 Install support structure.
 - 2.3 Check support structure, posts, stumps and piers for level, plumb and square.
- 3 Install bearers.
 - 3.1 Mark and cut bearer material to lengths for joining over supports.
 - 3.2 Make arrangements for damp proof course and termite shield to be installed where specified by regulations.
 - 3.3 Locate and fix bearers and check and adjust for square, in-line and level.
 - 3.4 Fix waling plates for decks and balconies to external walls.

- | | | | |
|---|-----------------------|-----|---|
| 4 | Install floor joists. | 4.1 | Set out location for floor joists using spacings in accordance with drawings and specifications. |
| | | 4.2 | Check floor joists for straightness, then fit and fix to line and level. |
| | | 4.3 | Fit and fix supporting blocks and trimmers around doorways and openings. |
| | | 4.4 | Cut, fit and fix trimmers to support sheet flooring joints. |
| | | | |
| 5 | Install flooring. | 5.1 | Check flooring materials for suitability. |
| | | 5.2 | Confirm floor measurements and cut and prepare flooring materials for installation with a minimum of waste. |
| | | 5.3 | Install and secure flooring to manufacturers' specifications. |
| | | | |
| 6 | Clean up. | 6.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | | 6.2 | Check, maintain and store tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3003A Install flooring systems.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3003 Install flooring systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3002A Carry out setting out. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing each of the following flooring systems:

- a bearer and joist system on supports to carry external walls and internal walls parallel to joists for a home or equivalent, not less than 30 square metres, including:
 - balcony/deck fixings
 - deep joists
- a tongue and groove fitted strip flooring surface, not less than 5 square metres
- an approved wet-area floor system, not less than 5 square metres
- a sheet platform system for a home or equivalent, not less than 10 square metres.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code including requirements for attachment of decks, Australian Standards and National Association of Steel-Framed Housing (NASH) Standards relevant to installing flooring systems
- workplace quality policies and standards for installing flooring systems
- safety requirements for installing flooring systems
- requirements and arrangements for installing damp proof systems and termite barriers
- floor and flooring system types, characteristics, construction methods and installation techniques
- application of the following floor framing:
 - premanufactured joists
 - conventional bearers and joists
 - drop-in (or in-line or deep) joist construction
 - sub-floor frame, including timber or steel
 - sub-floor support construction

- flooring support systems:
 - concrete stumps
 - masonry piers
 - patented adjustable supports
 - steel posts
 - timber or brick walls
 - timber stumps
- flooring system materials and their uses as required by the National Construction Code (NCC) and other legislation:
 - strip flooring
 - engineered products
 - floor boards
 - sheet products
- acclimatisation of flooring materials
- types of imposed loads and their effects
- types of insulation products
- plans, specifications and drawings for installing flooring systems
- types and uses of tools and equipment used to install flooring systems
- processes for calculating material requirements to minimise waste when installing flooring systems
- regulatory requirements applicable to floor framing and flooring
- setting out and levelling techniques.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3004 Construct and erect wall frames

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3004A Construct wall frames. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to plan, prepare, set out, construct and erect load-bearing and non-load-bearing wall frames for the different types of loadings, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes setting out, cutting and fabrication of timber frames and preparation of steel frames and the erection, connection and bracing of frames.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.	1.1 Read and interpret work instructions and plan sequence
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- of work.
- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Construct wall frames.
- 2.1 Set out location of walls on a slab or subfloor frame.
 - 2.2 Set out wall plates and a pattern stud meeting specifications and requirements under AS:1684 Residential timber-framed construction and National Association of Steel-framed Housing (NASH): Standard Residential and Low-rise Steel Framing.
 - 2.3 Assemble wall frames, lintels and bracing.
- 3 Erect frames.
- 3.1 Select timber and steel frames and components.
 - 3.2 Erect frames, fix into place and align using fixtures and fastenings in accordance with AS 1684 Residential timber-framed construction and National Association of Steel-framed Housing (NASH): Standard Residential and Low-rise Steel Framing.
 - 3.3 Attach temporary wall braces.
 - 3.4 Plumb corners at intersections, straighten wall plates and complete bracing.
 - 3.5 Straighten studs to maintain a flat surface for wall

coverings.

- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3004A Construct wall frames.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3004 Construct and erect wall frames

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3004A Construct wall frames. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- setting-out and constructing timber framed walls to a minimum height of 2.4 metres and minimum floor area of 30 square metres to accommodate roof and ceiling members and different types of cladding or linings, including:
 - two external load-bearing walls with one window opening and one door opening in each wall
 - two external straight walls with external intersection
 - two internal non-load-bearing walls encompassing an internal T junction and an external junction
- setting-out and erecting steel framed walls to a minimum height of 2.4 metres and minimum floor area of 30 square metres to accommodate roof and ceiling members and different types of cladding or linings, including:
 - two external load-bearing walls with one window opening and one door opening in each wall
 - two external straight walls with external intersection
 - two internal non-load-bearing walls encompassing an internal T junction and an external junction.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code (NCC) and Australian Standards relevant to constructing wall frames, including AS:1684 Residential timber-framed construction
- requirements of the National Association of Steel-framed Housing (NASH) Standards relevant to constructing and erecting wall frames
- workplace quality policies and standards for constructing and erecting wall frames
- safety requirements for constructing and erecting wall frames

- electrolysis and corrosion of dissimilar steels relevant to erecting steel wall frames
- plans, specifications and drawings for constructing and erecting wall frames
- types and uses of tools and equipment for constructing and erecting wall frames
- processes for:
 - setting out and measuring materials for frames
 - calculating material requirements
- applications for materials used for constructing and erecting wall frames
- timber types, structural properties and uses, including engineered timber products
- frame construction techniques.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3005 Construct ceiling frames

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Criteria 3.3 removed

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3005B Construct ceiling frames.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to plan, prepare, set-out, construct and erect timber ceiling frames to accommodate ceiling joists, hanging beams, strutting beams, combined hanging/strutting beams, and combined strutting/counter beams, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes selection of members and setting out of ceiling frames in conjunction with roof members.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.3 Select tools and equipment, check for serviceability and report any faults. |
| | 1.4 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select ceiling frame materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Set out ceiling. | 2.1 Identify rafter positions for roof type and set out on top plates to determine ceiling joist positions. |
| | 2.2 Set out location of ceiling joists on the top plate to specifications and spacing requirements of ceiling lining. |
| | 2.3 Design and set out for ceiling joist support members to meet the requirements of AS 1684 Residential timber-framed construction. |
| | 2.4 Cut and install ceiling joists, trimmers, hanging beams, counter beams, strutting beams and combinations of these components as per AS 1684. |
| 3 Clean up. | 3.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials |

handling.

- 3.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3005B Construct ceiling frames.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3005 Construct ceiling frames

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Criteria 3.3 removed

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3005B Construct ceiling frames.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by planning, setting out, constructing and erecting a timber ceiling frame for structure with a minimum of three rooms and minimum area of 30 square metres.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to constructing ceiling frames, including AS 1684 Residential timber-framed construction
- workplace quality policies and standards for constructing ceiling frames
- safety requirements for constructing ceiling frames:
 - working at heights
- waste disposal requirements relevant to constructing ceiling frames
- materials handling relevant to constructing ceiling frames
- correct use of tools and equipment used to construct ceiling frames
- processes for:
 - setting out and measuring materials for ceiling frames
 - calculating material requirements for ceiling frames
- materials for constructing ceiling frames:
 - types of timber
 - engineered timber products and their structural properties and applications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3006 Erect roof trusses

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCA3006B Erect roof trusses. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to select, set out, erect and brace timber and steel roof trusses in preparation for the installation of waterproof roof coverings, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, National Association of Steel-framed Housing (NASH) Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes erection of manufactured roof trusses in accordance with AS 4440 Installation of nail-plated timber roof trusses.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-----------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.3 Select tools and equipment, check for serviceability and report any faults. |
| | 1.4 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Identify materials required from truss layout plan, including fasteners and steel brackets, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Erect roof trusses. | 2.1 Set out location of roof trusses on top plates to truss layout plan. |
| | 2.2 Manage lifting and handling of materials, including lifting trusses and stacking loads on wall frames ready for use. |
| | 2.3 Erect, plumb and fix roof trusses to set out positions in correct sequence to align at apex. |
| | 2.4 Install bottom chord at constant height above internal wall plates and use to provide lateral support for internal walls. |
| | 2.5 Fix ceiling trimming and creeper trusses. |
| | 2.6 Construct and fix roof bracing following AS 4440 Installation of nail-plated timber roof trusses and |

- National Association of Steel-framed Housing (NASH) Standards.
- 2.7 Fix lateral restraints to truss chords in position to manufacturers' specifications.
 - 2.8 Install roof and internal wall bracing connections, including tie downs, for wind load following manufacturers' guidelines and AS 4440 and NASH.
- 3 Clean up.
- 3.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 3.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3006B Erect roof trusses.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3006 Erect roof trusses

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3006B Erect roof trusses. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- setting out and erecting timber trusses manufactured to AS 4440 *Installation of nail-plated timber roof trusses* and steel trusses to the requirements of the NASH Standards including:
 - a minimum 30 square metres of timber roof trusses with a major and minor span, including:
 - one hip end and valley
 - one gable end
 - a minimum 30 square metres of steel roof trusses with a major and minor span, including:
 - one hip end and valley
 - one gable end
- installing:
 - gable bracing, bottom chord bracing, web bracing and top chord bracing installed in line with the requirements of both AS 4440 *Installation of nail-plated timber roof trusses* to the requirements of the NASH Standards
 - a connection between an internal brace wall running parallel to the bottom chord
 - a connection between an internal brace wall running at 90 degrees to the bottom chord.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to erecting roof trusses, including AS 4440 *Installation of nail-plated timber roof trusses* required by the National Construction Code (NCC)

- requirements of the National Association of Steel-framed Housing (NASH) Standards relevant to erecting roof trusses
- workplace quality policies and standards relevant to erecting roof trusses
- safety requirements for erecting roof trusses
- plans, specifications and drawings for erecting roof trusses
- types and uses of tools and equipment required to erect roof trusses
- materials used in roof truss erection
- quality requirements for roof trusses
- roof truss erection and construction techniques
- types of roof construction and components of roof trusses
- techniques for lifting and positioning trusses
- processes and requirements for the temporary and permanent bracing of roof trusses and elementary bracing principles for various shaped roofs
- types of timber and their structural properties and uses, including engineered timber products.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3007 Construct pitched roofs

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3007C Construct pitched roofs.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to set out, construct and erect pitched roofs to accommodate roof coverings for weatherproofing purposes, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes determining the required materials and process, and constructing scotch valley gable, broken hip and valley roof structures.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 2 Set out, prepare and erect pitched roof members.
 - 2.1 Set out and mark position of members on top plates for roof type and rafter spacing.
 - 2.2 Determine bevels for all roof members.
 - 2.3 Calculate and set out pattern rafter to length allowing for overhang and creeper reductions.
 - 2.4 Set out and cut main ridge boards to length.
 - 2.5 Cut common rafters to length, and check.
 - 2.6 Erect common rafters in correct sequence.
 - 2.7 Calculate lengths for hip and valley rafters from pitch of roof.
 - 2.8 Cut and fix hip and valley rafters.
 - 2.9 Cut and fix creeper rafters from pattern rafter allowing for overhang.

- 3 Install roof support.
 - 3.1 Determine lengths for under-purlins.
 - 3.2 Cut and install under-purlins.
 - 3.3 Measure, cut and install struts to under-purlins, hips, valley and ridges.
 - 3.4 Install collar ties and tie-downs to span tables in *AS 1684 Residential timber-framed construction*.
 - 3.5 Fit trimmers to gable ends to take gable end rafter and barge board.
 - 3.6 Cut and fix valley boards and surrounding battens.

- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3007C Construct pitched roofs.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3007 Construct pitched roofs

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3007C Construct pitched roofs. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- setting-out, constructing and erecting:
 - a skillion roof above 10 degrees for a structure of a minimum 10 square metres
 - a roof, or a series of roofs, together covering a minimum of 30 square metres, including:
 - a broken hip and valley
 - a gable end
 - a scotch valley
- setting-out:
 - a pattern rafter with birdsmouth, creeper reductions and eave over-hang
 - roof bevels
 - strutting beams and under purlins as required by span tables in *AS 1684 Residential timber-framed construction* and manufacturers' specifications.
-

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to constructing pitched roofs, including AS 1684 Residential timber-framed construction
- workplace quality policies and standards relevant to constructing pitched roofs
- safety requirements relevant to constructing pitched roofs
- roofing frame construction techniques

- contents of, and terms and symbols used in plans, specifications and drawings for constructing pitched roofs
- types and uses of tools and equipment used for constructing pitched roofs
- processes, relevant to constructing pitched roofs, for:
 - setting out and measuring materials for frames
 - calculating material requirements
- materials relevant to constructing pitched roofs
- roofing set-out procedures
- types, structural properties and uses of timber, engineered timber products and steel for constructing pitched roofs
- characteristics and construction techniques of pitched roof types:
 - scotch valley
 - broken hip and valley
 - hip and valley
 - gable and verge
 - skillion
 - strut/props
- geometric development of bevels.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3008 Construct eaves

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3008B Construct eaves. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare, set out and construct eaves, including the cutting and fixing of fascia and barges to provide a finish between the wall and the roof, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes:

- construction of boxed and raked eaves
- finishing of gable ends including verge and flush.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.

- 2 Construct framework for eaves or soffits.
 - 2.1 Determine eaves design from drawings and specifications and set out and fix framework.
 - 2.2 Set out, mark and cut timber and steel framework members to lengths for framework structure.
 - 2.3 Construct boxed eaves with soffit bearers and fix to line and level to wall frame or support by hangers from rafters/trusses.
 - 2.4 Set-out and install eave supports.

- 3 Line and clad eaves and soffits.
 - 3.1 Mark and cut eaves cladding and sheeting material to shape to suit task application and jointing methods.
 - 3.2 Fit, join and fix eaves lining, cladding and soffits using methods for type of material and task application.
 - 3.3 Fit and fix mouldings to finish eaves.
 - 3.4 Fit raked eaves to rafters or framing.

- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and rectify or report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3008B Construct eaves.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3008 Construct eaves

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3008B Construct eaves. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by marking and cutting roof members to line to accommodate plumb fascia and barge and constructing:

- three metres of timber verge gable eaves
- three metres of timber boxed gable eaves
- three metres of timber boxed eaves
- three metres of timber raked eaves
- three metres of steel fascia with hangers.

In constructing these timber eaves, the following must be included:

- an apex junction on the barge board
- a junction between the barge board and the plumb fascia
- a junction of the fascia and eave lining at the valley
- a junction of the fascia and eave lining at the hip.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code (NCC) and Australian Standards relevant to constructing eaves, including AS 1684 Residential timber-framed construction and the National Association of Steel-framed Housing (NASH) Standards
- workplace quality policies and standards relevant to constructing eaves
- safety requirements for constructing eaves
- construction techniques for eave fascia and soffit
- eaves design:
 - sloping soffits and boxed eaves
 - verandas, concealed gutters and open eaves
- materials for constructing eaves:
 - beads

- sheeting
- joining mould
- steel
- quads
- timber and steel fascia
- roof battens
- timber lining boards
- levelling techniques for constructing eaves
- plans, specifications and drawings for constructing eaves
- types and uses of tools and equipment for constructing eaves
- processes for the calculation of material requirements for constructing eaves
- timber shrinkage and required clearances for various constructions
- geometry for constructing eaves.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3009 Construct advanced roofs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3009B Constructed advanced roofs. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to plan, prepare, set out and construct pitched roofs on irregular plan building shapes, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes gable, hip, hip and valley, or combinations of these in roofs that are applied to different types and styles of buildings. The roofs may have skewed, splayed or octagonal ends, may contain two separate roof pitches in the one structure, and have varying eave widths.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 1 Apply WHS requirements, policies and procedures in the construction industry.

CPCCCA3007 Construct pitched roofs

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.3 Select tools and equipment, check for serviceability and report any faults. |
| | 1.4 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Set out, prepare and erect roof members. | 2.1 Set out and check position of members on top of plates. |
| | 2.2 Determine bevels for all roof members. |
| | 2.3 Set out pattern rafter and cut to length allowing for overhang. |
| | 2.4 Mark main ridge boards and cut to length. |
| | 2.5 Cut common rafters to length. |
| | 2.6 Erect common rafters in sequence. |
| | 2.7 Calculate length of hip and valley rafters. |
| | 2.8 Cut and fix hip and valley rafters. |
| | 2.9 Cut and fix creeper rafters allowing for overhang. |

- 3 Install roof support.
 - 3.1 Determine lengths for under purlins.
 - 3.2 Cut and install under purlins.
 - 3.3 Measure, cut and install struts to under purlins, hips, valleys and ridges.
 - 3.4 Install collar ties and tie-downs to span tables in *AS 1684 Residential timber-framed construction*.
 - 3.5 Fit trimmers to gable ends to take gable end rafter and barge board.
 - 3.6 Cut and fix valley boards.

- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3009B Construct advanced roofs.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3009 Construct advanced roofs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3009B Constructed advanced roofs.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by constructing a roof, or a series of roofs, totalling a minimum of 30 square metres. These must include:

- a splayed end incorporating a hip end
- a splayed end incorporating a gable end
- incorporation of an octagonal end
- an intersection with another roof of a different pitch
- varying eave widths along the roof's length.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards, including AS:1684 Residential timber-framed construction, relevant to constructing advanced roofs
- workplace quality policies and standards relevant to constructing advanced roofs
- safety requirements for constructing advanced roofs
- types of tools and equipment required for constructing advanced roofs
- processes for determining the following for pattern rafters:
 - vertical height above birdsmouth
 - length of rafters for pitch of roof
 - pitch and plumb cut for rafters
- ridge boards:
 - abutment joints scarfed or butt jointed
 - those marked for rafter positions from wall plates
- plans, specifications and drawings for constructing advanced roofs
- processes for the calculation of material requirements for constructing advanced roofs

- roof calculations for lengths, quantities and pitch for constructing advanced roofs
- roof geometry
- roof set-out
- roof types and design.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3010 Install windows and doors

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3010A Install and replace windows and doors. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to plan, prepare and install window and door units, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the |

- National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Install window units.
- 2.1 Check wall frame opening for adequate clearance for window unit.
 - 2.2 Position window unit with packing and flashings so that the head and sill are level, stiles are plumb and in wind, and reveals or frame are finished flush with face of inside wall lining.
 - 2.3 Select type, gauge and quantity of fasteners as per *Australian Window Association - An Industry Guide to the Correct Fixing of Windows and Doors* and fix window to wall frame.
- 3 Prepare internal and external door openings, and construct and fix jamb.
- 3.1 Check wall frame for adequate clearance for door frame.
 - 3.2 Mark door jamb and head, cut to length, allowing for door clearances.
 - 3.3 Trench the door head to accommodate jambs, allowing for specified clearances.
 - 3.4 Assemble, square, fix and brace door frame with flush rebates.
 - 3.5 Select type, gauge and quantity of fasteners as per *Australian Window Association - An Industry Guide to the Correct Fixing of Windows and Doors*. Install door

frame into wall frame opening, ensuring the door jambs are plumb and in wind, positioned flush to linings, head is level, and all appropriate flashings are in place.

- | | | | |
|---|------------------------------------|-----|---|
| 4 | Install door. | 4.1 | Mark out hinges and fit to door and jamb. |
| | | 4.2 | Fit door to frame and adjust gaps to requirements of <i>AS2688 Timber and composite doors</i> . |
| | | 4.3 | Fit and fix door furniture and door stop components to manufacturers' specifications. |
| 5 | Install cavity door and door unit. | 5.1 | Fit hardware (rollers) to door according to manufacturer's specifications. |
| | | 5.2 | Fit door to cavity sliding door unit and adjust height of rollers to ensure leading door edge is plumb and closes neat against cavity sliding door stile. |
| | | 5.3 | Make final adjustments to packing of cavity sliding door stile. |
| | | 5.4 | Fit and fix door furniture and cavity door centring locators, according to manufacturer's specifications. |
| 6 | Clean up. | 6.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | | 6.2 | Check, maintain and store tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3010A Install and replace windows and doors.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3010 Install windows and doors

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3010A Install and replace windows and doors. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- installing in wall frames:
 - a standard window
 - a sliding cavity door unit and door
- constructing and fitting a standard external rebated door frame
- fitting and hanging one door, including door furniture, privacy set and door stops
- fitting and hanging a pair of doors.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards, relevant to installing windows and doors, including *AS2688 Timber and composite doors* and *AS2047 Windows and external glazed doors in buildings*, and *Australian Window Association - An Industry Guide to the Correct Fixing of Windows and Doors*
- workplace quality policies and standards relevant to installing windows and doors
- safety requirements for installing windows and doors
- flashing requirements and installation techniques relevant to installing windows and doors
- plans, specifications and drawings for installing windows and doors
- types of tools and equipment required to install windows and doors, their characteristics, uses and limitations
- processes for setting out windows and doors
- processes for calculating material requirements for installing windows and doors
- materials relevant to installing windows and doors
- various types of doors:
 - flush panel, framed and panelled, and glazed

- hinged door units including standard doors, sliding, flywire, combination window and door units, door sidelight units (glazed or unglazed) and internal doors
- jambs, stiles and sills
- flashing
- door furniture, including flush pulls, latches and deadlocks, push plates and closers, handles and locks
- window, door installation including flashing and fixing
- types of windows and doors, materials used and their characteristics and uses.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3011 Refurbish timber sashes to window frames

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3011A Refurbish timber sashes to window frames. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to refurbish timber sashes to window frames to rectify operation of external windows, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Refurbish casement/awning windows.
 - 2.1 Remove sash and hardware.
 - 2.2 Refurbish, fit and hang sash to correct margins.
 - 2.3 Fit window hardware.
- 3 Refurbish double hung windows.
 - 3.1 Remove sashes from frame in correct sequence.
 - 3.2 Refurbish and fit sashes to correct margins.
 - 3.3 Fit sash cords and weights or spiral balances or spring balances, check and adjust.
 - 3.4 Fit window hardware and mouldings.
- 4 Refurbish double hung windows.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3011A Refurbish timber sashes to window frames.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3011 Refurbish timber sashes to window frames

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3011A Refurbish timber sashes to window frames. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- removing, refurbishing and refitting one sash to a top or side hung window frame
- removing, refurbishing and refitting one pair of sashes to a double hung window.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to refurbishing timber sashes to window frames
- workplace quality policies and standards relevant to refurbishing timber sashes to window frames
- safety requirements for refurbishing timber sashes to window frames
- plans, specifications and drawings for refurbishing timber sashes to window frames
- processes for calculating material requirements for refurbishing timber sashes to window frames
- timber sash refurbishment techniques
- types and uses of tools and equipment required to refurbish timber sashes to window frames
- materials and construction methods used to construct window frames and sashes
- window hardware:
 - window furniture, including hinges, sash stays, weights and cords, spiral balances, spring balances, locks, winders, handles and knobs, lifts
 - frame and sash moulding, including:
 - parting beads
 - pocket pieces
 - stop beads
 - outside linings

- processes for setting out hardware of refurbished windows.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3012 Frame and fit wet area fixtures

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3012A Frame and fit wet area fixtures. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install supporting framework for fixtures and flashings for wet area construction of a bath, shower base, and prepare for wet area linings, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes setting out, cutting and fabrication of frames and installation of frames in bathroom, laundry, shower, toilet and en suite wet areas.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.	1.1 Read and interpret work instructions and plan sequence
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- of work.
- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Construct frames for bath installation.
- 2.1 Set out noggings and housings for bath fitments and fixtures.
 - 2.2 Notch studs to height and level for required depth to receive lip of bath.
 - 2.3 Construct support to front edge of bath to height and level.
 - 2.4 Fit and fix noggings and jack studs flush for lining.
- 3 Construct frames for shower base installation.
- 3.1 Set out location of shower base, noggings and housings for shower fitments and fixtures.
 - 3.2 Mark and notch all plates and studs to required depth to receive shower base.
 - 3.3 Fit and fix noggings and jack studs flush to wall face for lining.
 - 3.4 Install corner flashing.

- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3012A Frame and fit wet area fixtures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3012 Frame and fit wet area fixtures

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3012A Frame and fit wet area fixtures. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by setting out and erecting timber framing for a minimum of:

- one bath
- one shower base.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code (NCC) and Australian Standards relevant to framing and fitting wet area fixtures
- workplace quality policies and standards for framing and fitting wet area fixtures
- safety requirements for framing and fitting wet area fixtures
- contents of and terms and symbols used in plans, specifications and drawings for framing and fitting wet area fixtures
- types of tools and equipment used to frame and fit wet area fixtures
- materials for framing and fitting wet area fixtures
- processes for framing and fitting wet area fixtures for:
 - setting out and measuring materials for frames
 - calculating material requirements
- impacts of requirements for waterproofing on framing for wet areas.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3014 Construct and install bulkheads

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3014A Construct bulkheads. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to construct bulkheads for decorative purposes, to contain fittings, such as range hoods and cupboards, to conceal services, and to help facilitate changes in ceiling heights, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes preparing for sheeting bulkheads with plasterboard, lining boards, reconstituted timber products and metal or plastic decorative panels; and installation of bulkheads which may be hung from, incorporated into, or fastened onto a structure in situ.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Identify materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Fabricate bulkhead components.
 - 2.1 Set out bulkhead.
 - 2.2 Cut bulkhead trimmers and plates to set out.
- 3 Install bulkhead components.
 - 3.1 Select fasteners to support the weight of the bulkhead.
 - 3.2 Assemble bulkhead, fix to position and specification.
- 4 Install pre-manufactured bulkheads.
 - 4.1 Set out pre-manufactured bulkhead sections.
 - 4.2 Use fasteners as specified by frame manufacturer.
 - 4.3 Fix to position and specification.
- 5 Clean up
 - 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 5.2 Check, maintain and store tools and equipment and

report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3014A Construct bulkheads.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3014 Construct and install bulkheads

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3014A Construct bulkheads. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- constructing and installing:
 - one straight bulkhead framed in timber or steel measuring a minimum of 2 m width, 300 mm height and 300 mm depth
 - one curved bulkhead framed in timber or steel measuring a minimum of 2 m width, 300 mm height and 300 mm depth
- installing a pre-manufactured bulkhead measuring a minimum of 2 m width, 300 mm height and 300 mm depth.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to constructing and installing bulkheads
- workplace quality policies and standards relevant to constructing and installing bulkheads
- safety requirements relevant to constructing and installing bulkheads
- purposes of bulkheads:
 - decoration, to contain fittings (bar hoods and cupboards) and help facilitate changes in height to ceilings
 - services
 - range hoods
- materials and methods used to construct and install bulkheads
- application of curved geometry in the construction of bulkheads
- load and anchor capacities for bulkheads
- use of plans, specifications and drawings when constructing and installing bulkheads
- types and uses of tools and equipment used to construct and install bulkheads
- processes for setting out and measuring materials used to construct bulkheads

- processes for calculating material requirements for constructing and installing bulkheads.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3016 Construct, assemble and install timber external stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3016A Construct timber external stairs. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to construct, assemble and install timber external stairs of one or more flights to provide access into a building or structure, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes external stairs:

- installed from ground level to a landing
- constructed with open risers and with housed strings or metal brackets to accommodate treads
- freestanding or installed against an existing wall
- incorporating timber treads, stringers and balustrading.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.3 Select tools and equipment, check for serviceability and report any faults. |
| | 1.4 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Set out stair components. | 2.1 Determine exit and ground finish levels from site drawings and location. |
| | 2.2 Calculate rise and going of stairs. |
| | 2.3 Set out newel posts to layout of designed stairs. |
| | 2.4 Set out risers and goings to regulated pitch of stairs on stringers. |
| | 2.5 House stringers to accommodate treads or fix metal brackets to support treads. |
| | 2.6 Set out and cut material for treads to length. |
| 3 Assemble and install stairs. | 3.1 Cut stringers and attach into newel posts and landings. |
| | 3.2 Fix treads to stringers. |

- 3.3 Locate and secure bolts to maintain stair width.
 - 3.4 Fix bracing and lateral ties to newels to maintain rigidity of stair structure.
- 4 Fit handrails, balustrade and finish.
 - 4.1 Mark material for handrails and balusters and cut to length.
 - 4.2 Fit and fix handrails and balusters.
 - 4.3 Install non-slip finish to treads.
- 5 Clean up.
 - 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 5.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3016A Construct timber external stairs.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3016 Construct, assemble and install timber external stairs

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCA3016A Construct timber external stairs. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by constructing, assembling and installing one flight of timber external stairs from ground level to a minimum height of 1.1 metres, including a handrail and balustrade to the open side of the flight and landing.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to constructing, assembling and installing timber external stairs
- workplace quality policies and standards relevant to constructing, assembling and installing timber external stairs
- safety requirements for constructing, assembling and installing timber external stairs
- application of and requirements for line, level and plumb when constructing and installing stairs
- processes for reading and interpreting plans, specifications and drawings for constructing, assembling and installing timber external stairs
- types and uses of tools and equipment required to construct and install timber external stairs
- materials relevant to constructing, assembling and installing timber external stairs
- processes for measuring and calculating material lengths and quantities for constructing, assembling and installing timber external stairs
- durability, quality and treatment requirements of timber used for external stairs
- techniques used for constructing and installing timber external stairs, including different methods of joining and fixing components
- range and characteristics of different stair types
- characteristics of different handrails and balusters.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3017 Install exterior cladding

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3017B Install exterior cladding.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply material finishes to an external framed wall surface for the purpose of weatherproofing and securing the building, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes application of both sheet and linear style claddings in a range of materials.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
|---------------------|---|

- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC) including fire protection, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare exterior wall frames for cladding.
- 2.1 Check frames are true and plumb.
 - 2.2 Check frame and trim or pack studs to provide an even surface across studs and noggins.
 - 2.3 Fit and fix rows of noggings to frames to line, flush with wall face.
 - 2.4 Prepare frames to cladding manufacturers' installation instructions.
- 3 Fix thermal and moisture management.
- 3.1 Cut weatherproofing, vapour barrier, and flashing materials, fit into position, and secure.
 - 3.2 Identify locations for ancillary materials and prepare to required lengths, position and secure as per manufacturers' installation instructions.
- 4 Set out, cut and fix horizontal weatherboards.
- 4.1 Determine effective cover or overlap for cladding from recommended lap, type and profile of board and height of wall.
 - 4.2 Produce set-out rod or jig.

- 4.3 Mark locations of each profile on the building paper or corner stop to determine height of each row of profile.
 - 4.4 Cut cladding to fit length of wall faces or to join on intermediate studs.
 - 4.5 Join butt joints of cladding at centre of studs with joint flush to face and line.
 - 4.6 Join manufactured boards using manufacturers' specification/method.
 - 4.7 Fix and finish internal and external corners to manufacturers' specification/method.
- 5 Fix panelling.
- 5.1 Determine starting position of first panel against windows, doors and corners in accordance with specified design and finished effect.
 - 5.2 Cut panelling to fit height of wall.
 - 5.3 Fix abutting joints of panelling following manufacturers' specifications and requirements for flashing.
 - 5.4 Cut, fit and fix panelling plumb and level.
- 6 Clean up.
- 6.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 6.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3017B Install exterior cladding.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3017 Install exterior cladding

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3017B Install exterior cladding.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- producing a set-out rod for a minimum height of 2.1 metre using the effective cover of a weatherboard of a given profile
- installing weatherproofing, a vapour barrier and flashing
- fixing two different profiled weatherboards to eave height of at least 2.1 metres, incorporating an internal and an external corner with stops, flashings and sarking for a window and a door
- installing a minimum of two different types of external cladding panels, incorporating an internal and an external corner, abutting a window or door, and joints between boards determined by the material being used, manufacturers' recommendations and job specifications
- attaching vertical and horizontal cladding to frames.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to installing exterior cladding, including AS 1562 Design and installation of sheet roof and wall cladding
- requirements for fire management and moisture and energy efficiency for installing exterior cladding
- systems of cladding forming part of a fire-rated system
- workplace quality policies and standards relevant to installing exterior cladding
- safety requirements for installing exterior cladding
- materials and techniques used when installing common forms of exterior cladding
- manufactured cladding strips, sheets, boards and planks
- application of both sheet and linear style claddings in a range of materials
- use of pliable membranes, thermal break strips, sheets and battens relevant to installing exterior cladding

- process and requirements for installing flashing and sarking when installing exterior cladding
- procedures for safely handling and storing materials, and disposing of hazardous materials and waste
- plans, specifications and drawings relevant to installing exterior cladding
- types and uses of tools and equipment required to install exterior cladding
- processes for calculating material requirements for installing exterior cladding
- wall frame construction methods and their impact on processes to install exterior cladding.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3018 Construct, erect and dismantle formwork for stairs and ramps

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3018A Construct, erect and dismantle formwork for stairs and ramps. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to construct, erect and dismantle formwork for stairs and ramps to provide access between floors and landings, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

It includes:

- establishing required levels on site
- constructing timber, metal or prefabricated formwork to contain wet poured concrete until it is completely cured
- stripping the formwork
- preparing and storing formwork for re-use.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.3 Select tools and equipment, check for serviceability and report any faults. |
| | 1.4 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Set out formwork. | 2.1 Check formwork location for accuracy against plans and specifications. |
| | 2.2 Check design of stairs or ramp and method of joining formwork, and determine levels from drawings, specifications and site inspection. |
| | 2.3 Determine rise, going and pitch of stairs and ramp from drawings, specifications, site inspection, rise measurements, and requirements of the National Construction Code (NCC). |
| | 2.4 Calculate full size of stairs or ramp and set out. |
| | 2.5 Set out materials for formwork, including stringer form, to pitch of stairs with rises not exceeding specified space between treads. |

- | | |
|--------------------------------|---|
| 3 Assemble and erect formwork. | 3.1 Place, fix and brace landing bearers and joists. |
| | 3.2 Erect and brace stairs or ramp formwork soffit. |
| | 3.3 Cut, install and brace formwork for stringers. |
| | 3.4 Locate and fix formwork stringers for stairs and ramps. |
| | 3.5 Set out, cut square to length, and fix material for face of treads. |
| | 3.6 Brace risers at mid-span to prevent deflection under the load of wet concrete. |
| 4 Strip formwork. | 4.1 Strip formwork and bracing sequentially and safely. |
| | 4.2 Check formwork for reusability and dispose of damaged components. |
| | 4.3 Safely de-nail, clean, oil and store or stack reusable formwork components. |
| 5 Clean up. | 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | 5.2 Check, maintain and store tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3018A Construct, erect and dismantle formwork for stairs and ramps.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3018 Construct, erect and dismantle formwork for stairs and ramps

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3018A Construct, erect and dismantle formwork for stairs and ramps. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by constructing, erecting, stripping and dismantling the formwork for:

- one flight of stairs, freestanding or against a wall with a minimum rise of 1800 mm
- one ramp with a minimum rise of 400 mm and 5.6 metres long.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to constructing, erecting and dismantling formwork for stairs and ramps
- workplace quality policies and standards for constructing, erecting and dismantling formwork for stairs and ramps
- safety requirements for constructing, erecting and dismantling formwork for stairs and ramps
- line, level and plumb for constructing, erecting and dismantling formwork for stairs and ramps
- common formwork faults, problems and rectification methods
- materials used to construct and erect formwork
- fixings for formwork
- techniques to construct, erect and strip and dismantle formwork
- contents, terms and symbols used in plans, specifications and drawings for constructing, erecting and dismantling formwork for stairs and ramps
- types and uses of tools and equipment used to erect and strip and dismantle formwork
- processes for measuring and setting out formwork
- processes for calculating material requirements for constructing and erecting formwork for stairs and ramps
- regulations on stair and ramp construction for safe use, including disability access

- processes to construct stairs and ramps.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3019 Erect and dismantle formwork to suspended slabs, columns, beams and walls

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3019A Erect and dismantle formwork to suspended slabs, columns, beams and walls. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to erect and dismantle formwork to suspended slabs, columns, beams and walls to contain concrete in above-ground construction, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes:

- setting out, assembling and bracing formwork
- sorting formwork materials and preparing for re-use

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.

 - 2 Erect formwork.
 - 2.1 Clear work area and prepare surface for safe erection of formwork for suspended slabs, columns, beams and walls.
 - 2.2 Set-out formwork to requirements of drawings and specifications.
 - 2.3 Assemble formwork with support system to drawings, specifications and class of surface finish and set to correct height, level and line.
 - 2.4 Brace formwork to maintain rigidity and stability.
 - 2.5 Erect formwork support system sequentially to initial set-out and task specifications.
 - 2.6 Fabricate and erect formwork shutters and edge boxing to designed form requirements and dimensions specified to allow for safe stripping.
 - 2.7 Install block-outs and cast-in services to specified locations.
 - 2.8 Remove debris, sawdust and other waste materials from completed formwork following waste management requirements.

- 2.9 Apply release agent to formwork face to manufacturers' specifications.
- 3 Strip formwork.
 - 3.1 Strip formwork and bracing sequentially and safely.
 - 3.2 Check formwork for re-usability and disposed of damaged components to requirements.
 - 3.3 Safely de-nail, clean, oil and store or stack reusable formwork components.
- 4 Clean-up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3019A Erect and dismantle formwork to suspended slabs, columns, beams and walls.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3019 Erect and dismantle formwork to suspended slabs, columns, beams and walls

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3019A Erect and dismantle formwork to suspended slabs, columns, beams and walls. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by setting-out and erecting suspended slab formwork for a slab size of a minimum of 10 square metres.

The formwork must incorporate:

- one beam
- one wall of a minimum of 1.8 metres high by 1.0 metre long
- two different types of columns with a specified formwork system at a minimum height of 1.8 metres
- block-outs and cast-in services.

Formwork may be prefabricated or fabricated in situ and must be rigid and able to withstand the mass of wet concrete and actions imposed during placement. It must comply with regulations and specifications for height, level and loadings.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards including AS 3610 Formwork for concrete requirements relevant to erecting, stripping and dismantling formwork to suspended slabs, columns, beams and walls
- workplace quality policies and standards relevant to erecting, stripping and dismantling formwork to suspended slabs, columns, beams and walls
- safety requirements for erecting, stripping and dismantling formwork to suspended slabs, columns, beams and walls
- environmental requirements for erecting and dismantling formwork to suspended slabs, columns, beams and walls
- line, level and plumb for erecting formwork
- common formwork faults and problems, and suitable methods to rectify them

- formwork componentry
- materials and erection techniques used when erecting formwork to suspended slabs, columns, beams and walls
- contents of and terms and symbols used in plans, specifications and drawings relevant to erecting and dismantling formwork to suspended slabs, columns, beams and walls
- types and uses of tools and equipment used to erect and dismantle formwork
- processes for setting out formwork and measuring required materials
- purpose, application and properties of commonly used release agents relevant to erecting formwork to suspended slabs, columns, beams and walls.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3020 Erect and dismantle jump form formwork

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3020A Erect and dismantle jump form formwork. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to erect and dismantle jump-form formwork for concrete-pouring activities to construct wall structures where the formwork process is continuous, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes curved and straight jump-form formwork, which is erected and then moved to its next position.

Jump-form formwork requires work as a member of a mixed trades team, including carpenters, riggers, electricians, concreters and steel fixers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Set out formwork.
 - 2.1 Locate set out points and lines to engineer's drawings, survey datum points, and site drawings.
 - 2.2 Locate jump-form formwork to set out.
- 3 Assemble core form system.
 - 3.1 Erect and fix internal prefabricated system wall form shutters into location.
 - 3.2 Fit system onto concrete nib walls at heights consistent with requirements.
 - 3.3 Install shear key feet.
 - 3.4 Fit platforms and assembly into core.
 - 3.5 Fit structural steel system grid work and hydraulic hose lines.
 - 3.6 Suspend wall form shutters and fit system cladding and platforms.

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| 4 | Locate and install penetrations. | 4.1 | Set out locations and dimensions of penetrations to designated tolerance. |
| | | 4.2 | Construct penetrations, block-outs and cast-in services. |
| | | 4.3 | Install penetrations. |
| 5 | Jump the formwork. | 5.1 | Erect and fix external prefabricated system wall shutters. |
| | | 5.2 | Loosen and strip shutters to manufacturers' and WHS requirements. |
| | | 5.3 | Instruct rigger to activate electric or hydraulic jacking of the system to the new position. |
| | | 5.4 | Install trailing platforms. |
| | | 5.5 | Dismantle formwork. |
| 6 | Clean up. | 6.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | | 6.2 | Check, maintain and store tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3020A Erect and dismantle jump-form formwork.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3020 Erect and dismantle jump form formwork

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3020A Erect and dismantle jump form formwork. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by completing, as a member of a team, the erection and dismantling of curved and straight jump-form formwork for at least one jump operation, including penetrations, block-outs and cast-in services.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to erecting and dismantling jump-form formwork
- workplace quality policies and standards relevant to erecting and dismantling jump-form formwork
- safety requirements for erecting and dismantling jump-form formwork
- common formwork faults and problems, and suitable methods to rectify them
- concrete characteristics and properties used in jump-form formwork
- functions and operations of electric or hydraulic jacking systems relating to jump-form systems
- formwork materials and erection techniques
- contents of and terms and symbols used in plans, specifications for erecting and dismantling jump-form formwork
- types and uses of tools and equipment required to erect and dismantle jump-form formwork
- processes for calculating material requirements for erecting and dismantling jump-form formwork.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3022 Install curtain walling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3022A Install curtain walling.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to fit and fix curtain walling facades to multi-storey structures to provide external cladding of structural steel or reinforced concrete, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes the installation of fabricated frameworks with metal cladding, fabricated framework with glass panels, precast concrete panels, and manufactured and natural stone products in or on the structure.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.

- 2 Prepare site for installation.
 - 2.1 Set out location of curtain wall installation connections.
 - 2.2 Clear area below construction face to allow operation of support plant and equipment and isolate with barricades to work health and safety (WHS) requirements.
 - 2.3 Inspect surface of structure to receive curtain walling for conformity and prepare to receive fixings.

- 3 Install panels or cladding.
 - 3.1 Check and install curtain wall fixing brackets to set out points.
 - 3.2 Place and fix curtain walling into correct position.
 - 3.3 Install curtain walling plumb and level, align and fix into position.
 - 3.4 Fit and secure junctions between placed sections of curtain walling to fixing specifications.
 - 3.5 Install curtain wall trims.

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| 4 Seal curtain walling. | 4.1 | Clean surface areas in preparation for application of caulking sealants. |
| | 4.2 | Apply sealants to curtain walling and trims. |
| 5 Clean up. | 5.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment. |
| | 5.2 | Check, maintain and store tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3022A Install curtain walling.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3022 Install curtain walling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA3022A Install curtain walling.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing a minimum of 20 square metres of curtain walling for a multi-storey project:

In doing this, the candidate must:

- prepare the external surface to receive fixings
- secure fixings ensuring conformity with allowable tolerances
- install and fix sections of curtain walling checking for line and plumb
- seal erected surfaces using specified products.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to installing curtain walling
- workplace quality policies and standards for installing curtain walling
- safety requirements for installing curtain walling
- types of curtain walling materials, systems and techniques
- curtain wall fixing:
 - drilling holes
 - fixing brackets to steelwork
 - installing masonry anchors
 - trimming concrete surfaces for flatness
- contents of and terms and symbols used in plans, specifications and drawings for installing curtain walling
- procedures for safely using fall arrest systems and fall prevention methods
- processes for calculating material requirements for installing curtain walling
- purpose and safe use of swing scaffolding
- types and uses of tools and equipment used to install curtain walling.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3024 Install lining, panelling and moulding

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit

Application

This unit of competency specifies the skills and knowledge required to prepare, set out and install lining and panelling to masonry and timber and/or metal framed walls, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes installation of mouldings to provide decorative finishes.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare surface for lining/panelling.
- 2.1 Select fixing procedures for lining materials.
 - 2.2 Set out surface to provide a balanced panel or board effect to width and height.
- 3 Install lining/panelling.
- 3.1 Mark lining materials and cut to length and/or shape, fit and position.
 - 3.2 Secure and fix panelling/lining.
 - 3.3 Install panelling/lining to plumb, level and uniform plane.
- 4 Cut and fix profiled architrave mouldings.
- 4.1 Mark standard architraves for edging and cut to length, position and fit.
 - 4.2 Mark skirtings and cut to length, position and fit.
 - 4.3 Mark mitre joints, cut to length, position and fit flush to face and true without gaps.
 - 4.4 Mark scribed joints and cut to length, position and fit.
 - 4.5 Cut scotia return end to profile shape and length.
 - 4.6 Mark standard pelmet moulding to length and cut, fit,

assemble and fix with mitres true without gaps.

4.7 Set out raked moulding to position and shape mould to pattern for each position.

5 Clean up.

5.1 Clean up meeting all legislative and workplace requirements for safety, waste disposal and materials handling.

5.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3024 Install lining, panelling and moulding

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by completing to specifications:

- lining a continuous wall that includes one opening with lining boards to a minimum of 3.0 metres by 2.4 metres
- lining a continuous wall that includes one opening with sheet panelling to a minimum of 3.0 metres by 2.4 metres
- fitting profiled architraves to a minimum of one door or one window or a combination of both, with specified margins and tight fitting mitre joints
- cutting and fixing a profiled skirting with a minimum of one internal scribed joint and one external mitre joint with tight fitting joints
- scribing and mitring a Scotia, quad and colonial architrave with a minimum of one internal joint and one external mitre joint with tight fitting joints
- constructing a raking mould using either an internal scribed or external mitre joint with tight fitting joints.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relating to all aspects of installing lining, panelling and moulding
- workplace quality policies and standards for installing lining, panelling and moulding
- safety requirements for installing lining, panelling and moulding
- types of tools and equipment required for installing lining, panelling and moulding, and their appropriate uses
- processes for lining of framed walling or battened surfaces to provide a finished surface:
 - all moulding applications where joining occurs at surface intersections and involves change of levels and mouldings running at a slope or rake.
 - junctions of surfaces, which may be at right angles or obtuse or acute angles
 - lining boards, which may be vertical, horizontal or raked

- applications of lining materials:
 - lining, panelling, mouldings, nails, screws, adhesives and gap fillers
 - lining and panelling sheet materials, including lining boards, veneer panelling, plywood, hardboard, MDF board, particle board and fibre cement board
 - to floors, walls, ceilings, windows, door frames and jambs, built-in cupboards, built-in robes, fitments and stairs
- preparation of surfaces for lining:
 - fixing of battens to surface
 - trimming of frame members to line
 - fixing of additional noggings
 - packing of frame members
 - wedging of frame members
- various mouldings:
 - beading (flat, quad, cover strips and nosings)
 - bull nosed
 - multi-curved
 - ornate period profile
 - Scotia
 - splayed
 - square
- edging:
 - architrave
 - raking moulds
 - skirting
- joints.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3025 Read and interpret plans, specifications and drawings for carpentry work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to read and interpret plans and specifications for carpentry work in order to plan and sequence the work, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare. | 1.1 | Locate and access plans, specifications and drawings. |
| | 1.2 | Verify currency of plans, specifications and drawings. |
| 2 Interpret construction plans, drawings and their features. | 2.1 | Determine key features of plans, specifications and drawings. |
| | 2.2 | Interpret legend symbols and abbreviations. |
| | 2.3 | Check plans, specifications and drawings dimensions against workplace site for accuracy. |
| | 2.4 | Check plans and drawing dimensions against specifications for accuracy and inconsistencies. |
| 3 Locate key features on site plan. | 3.1 | Orient the plans, specifications and drawings with the site. |
| | 3.2 | Locate site services, main features, contours and datum from the site plan. |
| 4 Determine project requirements and plan project. | 4.1 | Review drawings, plans and specifications to determine construction details and dimensions for project. |
| | 4.2 | Determine location, dimensions and tolerances for ancillary works. |
| | 4.3 | Identify environmental controls and locations. |
| | 4.4 | Determine specifications for materials, standards of work, finishes and tolerances. |
| | 4.5 | Determine material requirements and processes to be followed. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3025 Read and interpret plans, specifications and drawings for carpentry work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by reading and interpreting plans, specifications and drawings for two, minimum 30m², carpentry projects. Each project must have a minimum of seven materials. A candidate must prepare a work plan for each project that should identify the dimensions, material requirements and processes to be followed.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- features and uses of project documentation, including:
 - construction plans
 - cross-sectional plans
 - dimensions and notes
 - illustrations
 - project specifications
 - site plans, elevations, floor plans and sections
 - structural detail and specification providing illustrations and dimensions
 - drawings
 - specifications
 - supplementary specifications
 - work schedules
 - detail relating to materials and quality of work, quality assurance, nominated subcontractors, and provision of site access and facilities
 - details relating to performance, including:

- characteristics
 - material types
 - standards of work
 - tolerances
 - treatments and finishes
- processes for planning and scheduling carpentry work from plans and specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3026 Assemble partitions

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit

Application

This unit of competency specifies the skills and knowledge required to set out and assemble partitions for the purpose of dividing areas into useable spaces, meeting all relevant requirements of national construction codes, Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

It includes prefabricated and demountable partitions constructed of timber or metal.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|--|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, national construction codes, Australian Standards, work |

- health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Set out and cut components.
- 2.1 Set out and mark location for partitions.
 - 2.2 Cut components to size.
 - 2.3 Distribute prefabricated or cut components and stack to suit job location and sequence of construction.
- 3 Assemble partitions.
- 3.1 Mark and prepare locations for member connections to designed spacings.
 - 3.2 Install fixing and fastenings to secure each junction of members tight together, flush on partition face and within ± 2 mm of set out.
 - 3.3 Assemble partitions and secure square and plumb to specification.
- 4 Clean up
- 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3026 Assemble partitions

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by setting out, cutting and assembling partitions a minimum of 4.8 metres in length and 1.8 metres in height, including:

- an L shape intersection
- a T intersection
- a window and door panel.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of national construction codes and Australian Standards relevant to assembling partitions
- workplace quality policies and standards relevant to assembling partitions
- safety requirements for assembling partitions
- types and uses of tools and equipment required for assembling partitions
- processes for assembling partitions for:
 - pre-glazed panels
 - lined or unlined door units
 - modular and custom window units
 - framed or solid
- fixing and fasteners for assembling partitions
- partition assembly techniques
- partitioning materials and manufacturers' instructions
- plans, specifications and drawings for partitions
- processes for setting out for assembling partitions.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3027 Set up, operate and maintain indirect action powder-actuated power tools

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to set-up, operate and maintain powder-actuated power tools safely and effectively to fasten materials or fix fasteners to bases, meeting all relevant requirements of work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, work health and safety (WHS) and environmental |

- requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select tools and equipment, check for serviceability and rectify or report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
- 2 Set out fasteners.
- 2.1 Set out fasteners, adhering to minimum distances from edge of substrate material.
 - 2.2 Position and hold or fix material into designed position.
- 3 Prepare powder-actuated power tool.
- 3.1 Strip, check and reassemble tool.
 - 3.2 Check tool for operation and test fire following manufacturer's specifications and WHS requirements for use of powder-actuated power tools.
 - 3.3 Select fastener.
 - 3.4 Assess requirements for material, base and penetration and select charge.
 - 3.5 Install attachments and accessories to tool following manufacturers' specifications and WHS requirements for use of powder-actuated power tools.
 - 3.6 Locate fastener and charge in powder-actuated power tool to manufacturers' specifications.
- 4 Operate powder-actuated power tool.
- 4.1 Operate tool to fix fastener in place to manufacturers' recommendations, legislation, regulations and codes of practice.
 - 4.2 Check fastening penetration, applying appropriate depth into material.
 - 4.3 Adjust power regulating device for conditions.

- | | | |
|---|--|---|
| | 4.4 | Perform misfire procedures in accordance with manufacturers' recommendations, legislation, regulations and codes of practice. |
| | 4.5 | Remove temporary holding and fixings. |
| 5 | Maintain powder-actuated power tools and kits. | |
| | 5.1 | Check safety features of tools for serviceability in accordance with manufacturers' recommendations. |
| | 5.2 | Clean and lubricate tools to manufacturers' recommendations. |
| | 5.3 | Perform periodic maintenance service to manufacturers' specifications. |
| 6 | Store powder-actuated power tools and charges. | |
| | 6.1 | Store charges in designated container in accordance with legislation, regulations and codes of practice, and record used charges. |
| | 6.2 | Store unused fasteners, tool and attachments in carry case following manufacturers' recommendations. |
| | 6.3 | Check logbook and record maintenance. |
| 7 | Clean up. | |
| | 7.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | 7.2 | Record safety or waste disposal discrepancies in accordance with workplace procedures. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3027 Set up, operate and maintain indirect action powder-actuated power tools

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by setting up, operating and maintaining powder-actuated power tools and attachments to:

- fix steel framing to a steel base
- fix steel framing to a concrete base
- fix timber to a steel base
- fix timber to a concrete base.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation and codes of practice relevant to setting up, operating and maintaining powder-actuated power tools
- workplace quality policies and standards relevant to setting up, operating and maintaining powder-actuated power tools
- safety requirements for setting up, operating and maintaining powder-actuated power tools
- types and uses of powder-actuated power tools
- powder-actuated power tools materials
- powder-actuated power tools charges and fasteners
- equipment safety manuals and instructions
- security and storage procedures for equipment and charges.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCA3028 Erect and dismantle formwork for footings and slabs on ground

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Equivalency changed to non-equivalent.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA2003 Erect and dismantle formwork for footings and slabs on the ground. Updated to reflect current industry terminology, tools and equipment.

Application

This unit of competency specifies the skills and knowledge required to erect and dismantle formwork for slabs on ground, rebates to slabs on ground, and steps to strip footings, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes:

- establishing required levels on site and constructing formwork using boxing materials, including timber, metal, masonry, fibre cement sheeting or reconstituted timber products, and fixings to contain wet poured concrete until it is completely cured
- stripping the formwork and preparing and storing it for re-use.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.3 Select tools and equipment, check for serviceability and report any faults. |
| | 1.4 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Erect formwork. | 2.1 Clear work area and prepare surface for safe erection of formwork. |
| | 2.2 Measure, set out and level formwork. |
| | 2.3 Apply fixing and fasteners to ensure stable formwork construction. |
| | 2.4 Construct and erect edge rebate. |
| | 2.5 Check and brace formwork for accuracy of square and dimension. |
| | 2.6 Install block-outs and cast-in services to specified locations. |

- 2.7 Apply release agent to formwork face following manufacturers' specifications.
- 3 Strip formwork and prepare for reuse.
 - 3.1 Strip edge boxing and bracing support sequentially and safely.
 - 3.2 Check formwork for re-usability and dispose of damaged components to meet safety and environmental requirements.
 - 3.3 Safely de-nail, clean, oil and store or stack reusable formwork components.
- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCCCA2003 Erect and dismantle formwork for footings and slabs on the ground.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3028 Erect and dismantle formwork for footings and slabs on ground

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Equivalency changed to non-equivalent.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCA2003 Erect and dismantle formwork for footings and slabs on the ground. Updated to reflect current industry terminology, tools and equipment.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by erecting and dismantling formwork for one slab on ground with:

- a minimum area of 30 square metres
- a minimum thickness of 100 millimetres
- an edge rebate and an internal corner.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to erecting and dismantling formwork for footings and slabs on ground
- workplace quality policies and standards relating to formwork
- safety requirements for erecting and dismantling formwork for footings and slabs on ground
- environmental requirements for erecting and dismantling formwork for footings and slabs on ground
- types and uses of tools and equipment for erecting and dismantling formwork for footings and slabs on ground
- types, characteristics and applications of formwork materials
- formwork techniques
- types of plans, specifications and drawings relating to formwork
- symbols and notations used on plans, specifications and drawings for formwork
- processes for measuring and setting out formwork

- processes for calculating material requirements for erecting formwork for footings and slabs on ground
- requirements for line, level and plumb for erecting formwork for footings and slabs on ground.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM1011 Undertake basic estimation and costing

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM1011A Undertake basic estimation and costing. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare a basic estimate of material, labour and costs for a construction project.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|-----------------------|-----|--|
| 1 Gather information. | 1.1 | Review plans and specifications for basic construction task. |
| | 1.2 | Create a material list for the basic construction task. |

- | | | |
|---|-----|---|
| | 1.3 | Obtain unit costs of materials on material list from suppliers. |
| 2 Estimate and cost materials for basic construction task | 2.1 | Estimate quantities of each item on material list. |
| | 2.2 | Calculate cost of materials based on estimated quantities and unit costs. |
| 3 Estimate and cost labour for basic construction task. | 3.1 | Estimate labour hours required for the basic construction task. |
| | 3.2 | Calculate cost of labour based on estimated hours and hourly rate. |
| 4 Document costs of basic construction task. | 4.1 | Calculate total cost of task materials and labour. |
| | 4.2 | Prepare basic costing sheet for the task. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM1011A Undertake basic estimation and costing.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM1011 Undertake basic estimation and costing

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM1011A Undertake basic estimation and costing. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by estimating, calculating and recording materials and labour requirements for a construction task and preparing a basic costing sheet.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, national construction codes, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, plans and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace policies and standards for estimating and costing basic construction tasks
- processes for reviewing and interpreting plans and specifications for basic construction tasks
- processes for sourcing material and unit costs
- processes for estimating:
 - quantities of materials for basic construction tasks
 - labour for basic construction tasks
- processes for calculating requirements and costs of:
 - materials for basic construction tasks
 - labour for basic construction tasks
- processes for preparing basic costing sheets.

Assessment Conditions

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM1014 Conduct workplace communication

Modification History

Release 1.

Supersedes and equivalent to CPCCCM1014A Conduct workplace communication.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Application

This unit specifies the skills and knowledge required to communicate effectively with other workers in a construction workplace.

It includes gathering, conveying and receiving information through verbal and written forms of communication.

The unit requires a person undertaking this work to demonstrate communication skills as an integral part of routine work.

It applies to workers in the construction industry. It involves working under supervision in a team environment.

No licensing, legislative, or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1. Gather, convey and receive information.	1.1 Gather, receive and respond to verbal and written instructions with appropriate actions. 1.2 Convey instructions accurately.

	<p>1.3 Receive, interpret and confirm conveyed information.</p> <p>1.4 Use questions to gain additional information and to clarify understanding, using appropriate communication transfer techniques.</p> <p>1.5 Respond to work signage and other work health and safety (WHS) requirements with appropriate actions.</p>
2. Use routine face-to-face communication.	<p>2.1 Receive and respond to routine instructions and messages.</p> <p>2.2 Follow workplace procedures for workplace requirements in communication with others.</p> <p>2.3 Access and interpret information from a range of sources using a variety of communication modes.</p> <p>2.4 Select and sequence information appropriately.</p> <p>2.5 Complete verbal and written reporting.</p>
3. Use visual communication.	<p>3.1 Use visual communication that follows accepted industry practice or social conventions.</p> <p>3.2 Obtain, confirm and acknowledge attention of communicating parties.</p> <p>3.3 Clarify and confirm the intention of the visual communication at each step.</p> <p>3.4 Question or visually cancel visual communication that is unclear or ambiguous.</p> <p>3.5 Follow up instances of unclear visual communication to avoid repeated problems.</p>
4. Participate in simple meeting processes.	<p>4.1 Identify and follow meeting processes.</p> <p>4.2 Seek responses and provide them to others in the meeting group.</p> <p>4.3 Provide constructive contributions.</p> <p>4.4 Identify and record meeting goals and outcomes.</p>

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM1014A Conduct workplace communication.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM1014 Conduct workplace communication

Modification History

Release 1.

Supersedes and equivalent to CPCCCM1014A Conduct workplace communication.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Performance Evidence

To demonstrate competency in this unit, a person must demonstrate conducting workplace communication three times in the English language, including during a simple meeting on at least one occasion.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- construction industry requirements for undertaking all aspects of conducting workplace communication including interpreting work orders and reporting problems
- construction industry processes to:
 - gather, convey and receive information in the workplace
 - carry out routine face-to-face communication in the workplace
 - apply visual communication in the workplace
 - participate in simple meetings.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

This unit must be assessed in the English language.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- a work role in a construction industry team

- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of appropriate sections of legislation and regulations
- relevant workplace policies and procedures.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2002 Carry out hand excavation

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCCM2002A Carry out excavation. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to undertake hand excavation tasks to form excavations for footings and the provision of services.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare for hand excavation.	1.1 Read and interpret work instructions and plan sequence of work.
	1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian

- Standards, work health and safety (WHS) and environmental requirements, workplace requirements, drawings and specifications.
- 1.3 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.4 Select tools and equipment, check for serviceability and report any faults.
- 2 Prepare excavation site and erect safety equipment.
- 2.1 Inspect work site to locate above ground services and assess hazards and determine risk controls.
 - 2.2 Locate service markers or taped areas to ensure underground services are avoided and free from interference.
 - 2.3 Establish line and depth using site pegs/profiles to mark excavation limits.
 - 2.4 Establish required signage and barricades and other risk controls.
 - 2.5 Establish temporary drainage system to divert surface and sub-surface water from excavation.
- 3 Dig excavations.
- 3.1 Dig excavations with hand tools to route, line and depth, following procedures to minimise risk to self and others.
 - 3.2 Install basic trench/excavation support.
 - 3.3 Use hand tools to remove loose material from excavation.
- 4 Check and store tools and equipment.
- 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCCM2002A Carry out excavation.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2002 Carry out hand excavation

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCCM2002A Carry out excavation. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by excavating, by hand, a 3 metre trench with a right angle, .5 metres deep and .5 metres wide.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the Commonwealth and state or territory legislation relevant to carrying out excavations
- workplace quality policies and standards for carrying out excavations
- safety requirements for carrying out excavations
- environmental requirements for carrying out excavations
- types and uses of hand tools and equipment required for carrying out excavations
- locating services on construction sites
- use and types of service markers
- processes for establishing trench line and depth
- temporary drainage systems to divert surface and sub-surface water from excavations
- types of basic trench excavation support.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2004 Handle construction materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCCM2004A Handle construction materials.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to safely handle and store commonly used construction materials manually or in preparation for mechanical handling.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---|-----|---|
| 1 Prepare to handle construction materials. | 1.1 | Review work instructions to handle construction materials. |
| | 1.2 | Prepare all work to comply with laws and regulations, national construction codes, Australian Standards, work |

- health and safety (WHS) and environmental requirements, manufacturers' specifications and safety data sheets (SDS), workplace requirements, drawings and specifications.
- 1.3 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.4 Select tools and equipment, check for serviceability and report any faults.
- 2 Manually handle, sort, stack and store construction materials.
- 2.1 Sort materials to suit material type, size and safety requirements, including SDS.
 - 2.2 Apply safe manual handling techniques to move materials to specified location or to stack and secure materials for mechanical handling in accordance with the type of material and equipment to be used.
 - 2.3 Stack materials clear of access ways and for ease of identification, retrieval, task sequence and task location.
 - 2.4 Protect materials against physical and water damage.
 - 2.5 Apply procedures to ensure no cross-contamination of materials.
 - 2.6 Identify and isolate hazardous materials for separate handling.
 - 2.7 Apply dust suppression procedures to minimise health risk.
- 3 Clean up.
- 3.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 3.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCCM2004A Handle construction materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2004 Handle construction materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCCM2004A Handle construction materials.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by handling construction materials for three different tasks, including:

- safely handling, sorting and stacking:
 - varying lengths of timber or similarly proportioned materials
 - different sizes and types of sheet material
 - bagged materials
 - simulated hazardous materials
- preparing the following for mechanical handling:
 - varying lengths of timber or similarly proportioned materials
 - different sizes and types of sheet material.

All work must be performed to the standard required in the workplace and must comply with work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Commonwealth and state or territory work health and safety (WHS) legislation relevant to handling construction materials
- safety data sheets
- workplace quality policies and standards for handling construction materials
- safety requirements for handling construction materials
- methods of securing materials for mechanical handling
- types and uses of tools and equipment for handling construction materials:
 - hammers
 - pallets

- pallet jacks
- pinch bars
- tin snips
- wheelbarrows
- hand trolleys
- requirements, including personal protection equipment, and processes for safely manually handling each of the following materials:
 - insulation
 - joinery units
 - metal sheeting
 - paints and sealants
 - plaster or fibre cement sheeting
 - reinforcement materials
 - scaffolding components
 - structural steel sections and components
 - timber
 - hazardous materials
- methods of handling construction materials:
 - material size, weight or shape factors necessitating the assistance of other workers
 - correct lifting and carrying techniques, use of pallets and control of waste
 - preparation for mechanical handling, including the use of forklifts, pallet jacks and trucks.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2005 Use construction tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCCM2005B Use construction tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to safely select and use basic construction tools and equipment.

It includes hand tools, power tools and pneumatic tools.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Select and use tools and equipment.

1.1 Review work instructions for a construction task.

1.2 Select equipment and hand, power and pneumatic tools

- for the construction task, identify functions and operations, check for serviceability and report any faults.
- 1.3 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.4 Conduct pre-operational checks to manufacturers' specifications.
 - 1.5 Use equipment and hand, power and pneumatic tools following WHS requirements and manufacturers' specifications.
- 2 Clean up.
- 2.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 2.2 Check, maintain and/or sharpen, store and secure tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCCM2005B Use construction tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2005 Use construction tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCCM2005B Use construction tools and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must complete three different construction tasks. Over the course of these three tasks, they must satisfy all the elements, performance criteria and foundation skills of this unit by safely and effectively using and maintaining and/or sharpening each of the following at least once:

- hand tools:
 - retractable tape measure
 - builders square
 - string line
 - hand saw
 - hammer
 - chisel
 - trimming knife
 - clamps
 - spirit level
 - tin snips
 - shovel/spade
 - mattock
 - crow bar/fencing bar
- power/battery/pneumatic tools and equipment:
 - circular saw
 - reciprocating saw
 - angle grinder
 - drill/driver drill
 - nail gun
 - bench grinder
 - jack hammer

- extension lead
- portable residual current device
- air compressor and hoses.

Use of all tools must be to the standard required in the workplace and use must comply with work health and safety (WHS) requirements and manufacturers' specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace quality policies and standards for using basic construction tools and equipment
- safety requirements for using basic construction tools and equipment
- manufacturers' specifications for basic construction tools and equipment
- types and uses of basic tools and equipment, including:
 - hand tools:
 - retractable tape measure
 - builders square
 - string line
 - hand saw
 - hammer
 - chisel
 - trimming knife
 - clamps
 - spirit level
 - tin snips
 - shovel/spade
 - mattock
 - crow bar/fencing bar
 - power/battery/pneumatic tools and equipment:
 - circular saw
 - reciprocating saw
 - angle grinder
 - drill/driver drill
 - nail gun
 - bench grinder
 - jack hammer
 - extension lead
 - portable residual current device
 - air compressor and hoses.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- industry-standard equipment used to perform the tasks specified in performance evidence
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2009 Carry out basic demolition

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCCM2009A Carry out basic demolition.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required remove components from single storey buildings and structures using basic demolition techniques. It includes the preparation of the site for the demolition process and the removal of components.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|--|
| 1 Plan and prepare for basic demolition. | 1.1 Read and interpret site demolition plan and plan sequence of work. |
|--|--|

- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, workplace requirements, drawings and specifications.
 - 1.3 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.4 Select tools and equipment, check for serviceability and report any faults.
- 2 Prepare demolition site and erect safety equipment.
 - 2.1 Inspect work site to assess hazards and determine risk controls.
 - 2.2 Confirm with supervisor or regulatory authorities that existing services have been disconnected.
 - 2.3 Install signs and barriers around the demolition site and to identify underground and above-ground services.
 - 2.4 Identify and report hazardous material for separate demolition and handling.
- 3 Remove building components.
 - 3.1 Remove building components in sequence and in accordance with site demolition plan, demolition method statement, standards and workplace procedures.
 - 3.2 Remove components to storage or disposal area using safe materials handling techniques.
- 4 Check and store tools and equipment.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCCM2009A Carry out basic demolition.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2009 Carry out basic demolition

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCCM2009A Carry out basic demolition.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by, on one occasion, following a site demolition plan, demolition method statement and instructions to safely remove fixtures and fittings, ceilings and walls of a structure, clean up, and dispose of or salvage materials.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, workplace requirements and the site demolition plan.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the Commonwealth and state or territory legislation and Australian Standards relevant to carrying out basic demolition
- workplace policies and standards for carrying out basic demolition
- safety requirements for carrying out basic demolition, including personal protection equipment and asbestos safety requirements
- environmental requirements for carrying out basic demolition
- types and uses of tools and equipment required for carrying out basic demolition
- processes for:
 - assessing hazards and determining risk controls when carrying out basic demolition
 - identifying and reporting hazardous materials when carrying out basic demolition
- safe manual handling techniques for:
 - removing components to storage or disposal areas
 - stacking components for storage
 - preparing components for transport.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, industry standard equipment, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2012 Work safely at heights

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM2010B Work safely at heights.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to work safely on construction sites where the worker has the potential to fall from one level to another.

This unit of competency does not cover the erection of scaffold or work platforms, but it does include identifying and reporting common faults with scaffold or work platform systems.

Work at heights is undertaken in a range of construction work, including new construction, renovation, refurbishment and maintenance.

This unit also applies to workers in other industries who need to control the two separate risks associated with people and objects falling from heights.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Identify task requirements.
 - 1.1 Read work order and associated drawings and consult with relevant persons to determine the proposed work-at-heights task, including where and how work is to be carried out, and the equipment or plant to be used.
 - 1.2 Participate in the development of the safe work method statement (SWMS) for the specified task.
 - 1.3 Select appropriate work-at-heights control measures including required fall restraint devices and/or fall arrest devices in accordance with workplace and regulatory requirements.
 - 1.4 Determine location of anchor points for harness-based work to safely access required work area.
 - 1.5 Review completed SWMS and clarify issues with relevant persons.

 - 2 Access and assess work area.
 - 2.1 Select personal protective equipment (PPE), check for serviceability and report problems.
 - 2.2 Identify unstable, fragile or brittle work surfaces and implement control measures to prevent a fall from height.
 - 2.3 Check fall protection equipment, including required fall restraint and fall arrest devices to ensure serviceability and report problems.
 - 2.4 Identify, select and install signage and barricade equipment in accordance with SWMS or relevant safe work procedure.
 - 2.5 Install/fit fall protection equipment, including fall restraint devices and fall arrest devices as appropriate, within the limitations of licensing requirements, level of authority and SWMS.
 - 2.6 Ensure required fall protection, scaffold and barriers have been adequately installed and where necessary certified, in accordance with regulatory and workplace requirements.
 - 2.7 Connect to fall protection equipment, including temporary anchor points, without being exposed to a risk

- of a fall from height.
- 2.8 Consult with relevant persons to confirm fall protection equipment and safety systems are correctly fitted, adjusted and installed, and are appropriate to the task.
 - 2.9 Access work area safely and move and place tools, equipment and materials using methods that eliminate or minimise the risk of falling objects.
- 3 Conduct work tasks.
- 3.1 Undertake work tasks in compliance with the SWMS and workplace requirements.
 - 3.2 Traverse between anchor points while remaining connected to the fall prevention system and protected from a risk of a fall from height.
 - 3.3 Use PPE appropriate to the task and in accordance with manufacturer requirements.
 - 3.4 Maintain communication with relevant persons while working at height.
 - 3.5 Keep fall protection equipment in place and adjust to allow for movement during work.
 - 3.6 Keep fall prevention equipment adjusted to prevent falling off or through a structure using the restraint technique.
 - 3.7 Keep scaffold/work platform components and fall barriers in place during work.
 - 3.8 Monitor control measures and consult with relevant persons to respond to changing work practices or site conditions.
 - 3.9 Exit from work area removing tools and materials in compliance with worksite procedures, safety and environmental requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM2010B Work safely at heights.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2012 Work safely at heights

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM2010B Work safely at heights.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by working safely at heights above 2 m on three occasions, using different fall protection equipment/devices on each occasion.

One occasion must include a restraint technique (anchor point) system with a minimum of three anchor points.

The candidate must access the work area, traverse between anchor points and exit from the work area.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for working safely at heights under applicable Commonwealth, state or territory work health and safety (WHS) legislation, Australian Standards and codes of practice:
 - hazard identification and risk control
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment:
 - operation manuals
 - manufacturer specifications
 - safety signs and load charts for plant
 - signage and barricades
 - selection, fitting and use of personal protective equipment (PPE)
 - environmental and worksite safety plans
 - reporting problems
- processes for planning to work safely at heights:

- assessment of weather and ground conditions that may affect safety while working at heights
- assessment of conditions and hazards
- determination of work requirements
- identification of equipment defects
- inspection of worksites
- methods for identifying common faults with scaffold or work platform systems
- types, characteristics, uses and limitations of equipment used when working safely at heights:
 - air compressors and hoses
 - anchor points
 - edge protection
 - elevated work platforms (EWPs)
 - fall arrest anchors
 - fall arrest inertia reels
 - guard rails
 - hand and power tools including nail guns
 - ladders
 - power leads
 - rescue equipment
 - ropes
 - safety harnesses, lanyards and attachments such as snap hooks and carabiners
 - scaffolding
 - shock absorbers
 - stairways
 - static line systems
 - temporary anchor systems
 - trestles
- safe methods for accessing work area, traversing between anchor points and exiting from work area including removing tools and materials when working at heights.
-

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2013 Undertake basic installation of wall tiles

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to use adhesive to undertake basic installation of tiles to flat wall substrates.

It includes the preparation, installation and grouting of tiles for walls, including cutting simple penetrations. It does not include tiling internal and external wall junctions and junctions between walls and floors.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Prepare for basic installation of wall | 1.1 Read and interpret task work instructions. |
| | 1.2 Select and use personal protective equipment (PPE) as |

- tiles. required for each stage of the task.
- 1.3 Plan all work to comply with laws and regulations, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Select tools and equipment, check for serviceability and report any faults.
 - 1.5 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 1.6 Cover surrounding surfaces to protect from damage.
- 2 Set out basic wall tiling.
- 2.1 Check tiles conform to the requirements of the task and are fit for purpose.
 - 2.2 Set out basic tile work grid pattern to be symmetrical and balanced.
- 3 Prepare substrate and tiles, and install tiles
- 3.1 Check that the wall substrate is flat.
 - 3.2 Prepare and apply adhesive to substrate and/or tile surface.
 - 3.3 Prepare and install tiles set to level and plumb, maintaining joint and face alignment.
 - 3.4 Cut simple penetration/s in tiles.
 - 3.5 Check joints, tile edges and surface alignment.
- 4 Grout tiles.
- 4.1 Clean and prepare joints to receive grout.
 - 4.2 Mix and apply grout.
 - 4.3 Clean and polish tiles.
- 5 Clean up.
- 5.1 Clear work area and dispose of, reuse or recycle materials.

- 5.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2013 Undertake basic installation of wall tiles

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by preparing a flat wall substrate and tiling a minimum of 1.62 square metres with a penetration.

All work must be performed to the standard required in the workplace and must comply with work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace policies for basic installation of wall tiles
- safety requirements for installing wall tiles, including personal protective equipment (PPE)
- environmentally friendly waste management for basic installation of wall tiles
- simple drawings for basic installation of wall tiles
- types and uses of tools and equipment for basic installation of wall tiles
- processes for calculation of material requirements for basic installation of wall tiles.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM3002 Operate a truck-mounted loading crane

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM3002A Operate a truck mounted loading crane. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely and effectively operate a truck-mounted loading crane to load and unload building products delivered from suppliers to the construction site. It includes set-up, operation, control and shutdown of the crane.

This unit supports workers who safely and efficiently use a truck-mounted loading crane to handle construction materials and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to	1.1 Interpret work order and associated documentation and
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- operate truck-mounted crane.
- 1.1 clarify requirements with relevant persons.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.
- 1.3 Select plant, tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
- 1.4 Conduct calculations to ensure load mass does not exceed the working capacity of the crane and manufacturer limits.
- 1.5 Select and fit personal protective equipment (PPE) appropriate for work activities.
- 2 Set up and operate truck-mounted crane.
- 2.1 Position truck at the designated drop-off point on a level operating surface.
- 2.2 Activate crane and manoeuvre it to its operating position from its lockdown position.
- 2.3 Check crane movements comply with requirements for safe crane operation.
- 2.4 Prepare load for lifting in accordance with crane, truck and dogging requirements.
- 2.5 Check that site is clear and safe to receive or dispatch the load.
- 2.6 Manoeuvre load to position using controls in accordance with manufacturer requirements.
- 2.7 Monitor load continually throughout its travels.
- 2.8 Shut down crane and return it to its lockdown position.
- 3 Finalise operation of truck-mounted crane.
- 3.1 Complete documentation in accordance with workplace requirements.
- 3.2 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.

- 3.3 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM3002A Operate a truck mounted loading crane.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM3002 Operate a truck-mounted loading crane

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM3002A Operate a truck mounted loading crane. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by setting up and operating a truck-mounted loading crane involving loading and unloading at least two full loads of building and construction materials and products, and extending all functions of the crane to their maximum working capacity.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for operating a truck-mounted loading crane under applicable Commonwealth, state or territory work health and safety (WHS) legislation, Australian Standards and codes of practice:
- job safety and environmental analyses (JSEAs)
- safe work method statements (SWMSs)
- safety data sheets (SDSs)
- safety manuals and instructions for plant, tools and equipment
- signage and barricades
- environmental and worksite safety plans
- personal protective equipment (PPE)
- reporting problems
- processes for preparing loads for lifting in accordance with crane, truck and dogging requirements
- designs and functions of truck-mounted loading cranes
- safe truck-mounted crane operations:
 - boom up and down
 - operation of attachments
 - operation of outriggers
 - slew left and right

- telescope in and out
- mathematical processes for ensuring load masses do not exceed the working capacity of the crane and manufacturer limits
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCO2013 Carry out concreting to simple forms

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCO2013A Carry out concreting to simple forms. Updated to meet the Standards for Training Packages.

Application

This unit of competency specifies the skills and knowledge required to safely install formwork, reinforcement and place and finish concrete for the construction of minor slabs, pathways and other minor works to a specified design finish, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.3 Select tools and equipment, check for serviceability and report any faults. |
| | 1.4 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Erect simple formwork. | 2.1 Prepare substrate. |
| | 2.2 Review formwork design from drawings. |
| | 2.3 Erect formwork. |
| | 2.4 Install vapour barrier. |
| 3 Place and tie reinforcement. | 3.1 Handle, cut and position reinforcing components. |
| | 3.2 Position reinforcing bars and mesh. |
| | 3.3 Position bar chairs and spacers with minimum edge cover. |
| 4 Place concrete. | 4.1 Clean formwork or excavation of excess material and |

- debris before concrete placement.
- 4.2 Transport concrete by wheelbarrow.
 - 4.3 Place concrete in formwork to specified depth.
 - 4.4 Screed concrete to the alignment of formwork and specified datums.
 - 4.5 Finish surface of concrete to specifications.
- 5 Strip simple formwork.
- 5.1 Denail timber components following stripping of formwork.
 - 5.2 Clean and stack components and store for reuse or bundle for removal.
 - 5.3 Remove formwork components from site.
- 6 Clean up.
- 6.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 6.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO2013A Carry out concreting to simple forms.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCO2013 Carry out concreting to simple forms

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCO2013A Carry out concreting to simple forms. Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by carrying out concreting to a simple form slab of at least 1 square metre and 100 mm in depth by:

- preparing substrate
- erecting formwork
- cutting, placing and tying reinforcement
- placing and hand-screeding concrete to the required finished level and job specification.

All work must be planned and performed using appropriate tools and equipment to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to concreting to simple forms
- workplace quality policies and standards relevant to concreting to simple forms
- safety requirements for concreting to simple forms
- types and uses of tools and equipment required for concreting to simple forms
- uses of concreting materials, including:
 - bar chairs
 - bracing

- edge form and boards
- fabric sheet mesh
- pegs
- spacers
- reinforcing bars
- vapour barriers
- concreting techniques, including:
 - placing
 - screeding
 - finishing
 - floating
- simple forms of concrete, including:
 - beam thickeners
 - channels
 - garden edges
 - pathways
 - post holes
 - simple concrete aprons and slabs
- finishing, including:
 - broomed
 - trowelled
 - trowelling machine finish
 - wood-floated
- properties and use of concrete relevant to concreting to simple forms, including:
 - uses and limitations at differing strength levels
 - ingredients and proportions
 - maintaining design strength during placement
 - mixing techniques
 - curing techniques
 - vibrating and over-vibration
- levelling techniques for concreting to simple forms
- materials storage and environmentally friendly waste management
- plans, drawings and specifications for concreting to simple forms
- processes for the calculation of material requirements for concreting to simple forms, including volume of concrete
- quality requirements for concreting to simple forms
- simple formwork and reinforcing componentry.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCO2014 Carry out concrete work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to Foundation Skills.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCO2014A Carry out concrete work.
Updated to meet the Standards for Training Packages.

Application

This unit of competency specifies the skills and knowledge required to carry out concreting work on general construction projects for the construction of in situ reinforced concrete structures, such as slabs and other common concrete works.

It includes setting-out, reinforcing, erecting and dismantling formwork, and placing, finishing and curing concrete.

The unit supports workers to use the tools, equipment and materials to carry out concrete work, working as members of a team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Determine

1.1 Review and clarify concrete work task.

- | | | |
|---|---------------------------------------|---|
| requirements to carry-out concrete work. | 1.2 | Review task specifications, and check to make sure they are in accordance with legislation, regulations and codes of practice. |
| | 1.3 | Review work health and safety (WHS) requirements for the task in accordance with safety plans and policies. |
| | 1.4 | Identify safety signage and barricade requirements. |
| | 1.5 | Review environmental requirements for the task in accordance with environmental plans and legislative requirements. |
| | 1.6 | Determine plant, tools, equipment and formwork components and materials required to carry out task. |
| | 1.7 | Calculate materials quantities. |
| | 1.8 | Determine location of steel reinforcement and formwork from drawings and reinforcement schedule. |
| | 2 Prepare to carry-out concrete work. | 2.1 |
| 2.2 | | Obtain, safely handle, locate and prepare materials. |
| 2.3 | | Obtain plant, tools, equipment and formwork components and materials, check for serviceability and rectify or report any faults |
| 2.4 | | Check reinforcement against reinforcement drawings and specifications. |
| 2.5 | | Select fixing and fasteners. |
| 3 Set out for concrete work. | 3.1 | Set string lines accurately from existing pegs. |
| | 3.2 | Check grades to ensure correct fall. |
| | 3.3 | Protect surfaces to prevent damage. |
| 4 Construct and install reinforcement for | 4.1 | Cut and bend reinforcing fabric and bars in accordance with project drawings and specifications. |

- concrete work.
- 4.2 Tie and fix fabric and bars to configuration from project drawings and specifications.
 - 4.3 Attach stiffening rods to panels as required to facilitate handling.
 - 4.4 Locate reinforcement material in formwork and place on bar chairs or spacers in accordance with drawings, noting clearance from formwork.
 - 4.5 Locate and secure cast-in items.
- 5 Erect formwork for concrete work.
- 5.1 Clear work area and prepare surface for safe erection of formwork.
 - 5.2 Set out formwork to requirements of drawings and specifications.
 - 5.3 Assemble and erect formwork to specifications.
 - 5.4 Remove debris, sawdust and other waste material from formwork.
 - 5.5 Apply form release agent in accordance with manufacturers' specifications.
- 6 Carry out concrete work.
- 6.1 Use correct manual handling techniques with wheelbarrow to transport concrete and to discharge into formwork.
 - 6.2 Ensure control of discharge of concrete from concrete pump line and chute into formwork.
 - 6.3 Place concrete in accordance with requirements and screed to specified levels and grades.
 - 6.4 Compact concrete to specification using immersion vibrator or other specified method.
 - 6.5 Finish and cure concrete in accordance with specifications.
 - 6.6 Position and install control joints to specification and to current Australian Standard and codes.
 - 6.7 Position dowel joints in accordance with specification.

	6.8	Ensure concrete surface is adequately covered and protected.
7 Strip formwork from concrete work.	7.1	Carefully remove edge boxing and braces in sequence.
	7.2	De-nail, clean and store timber components.
	7.3	Remove, clean, oil and store steel components.
	7.4	Discard damaged formwork components after stripping.
	7.5	Clean screens safely before movement.
8 Clean up after completing concrete work.	8.1	Clear work area and dispose of, reuse or recycle materials in accordance with legislation, regulations, codes of practice and task requirements.
	8.2	Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' specifications and workplace requirements.

Foundation Skills

A person demonstrating competency in this unit must have the following language, literacy, numeracy and employment skills:

- reading skills to:
 - interpret task documentation, including drawings, specifications and plans
 - review safety plans and policies and environmental plans
 - understand written instructions, procedures and signs
 - interpret manufacturers' specifications and workplace requirements
 - interpret legislative requirements including those of regulatory authorities, Australian standards and the National Construction Code (NCC)
- numeracy skills to:
 - calculate quantities of materials
 - calculate formwork and fixing requirements
 - set out for concrete work
- communication and teamwork skills to:
 - determine requirements

- enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
- follow instructions
- identify and accurately report any faults
- use and interpret non-verbal communication, such as hand signals

Unit Mapping Information

Supersedes and is equivalent to CPCCCO2014A Carry out concrete work

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCO2014 Carry out concrete work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to Foundation Skills.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCO2014A Carry out concrete work.
Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency in this unit, a person must carry out concrete work in three concreting projects. Each project must:

- use a minimum of two cubic metres of concrete
- incorporate a minimum of two different finishes.

At least one project must contain angled formwork and bent reinforcement.

In doing this, the person must meet the requirements of the unit's elements and associated performance criteria:

- determining requirements to carry-out concrete work
- preparing to carry-out concrete work\
- setting-out for concrete work
- constructing and installing reinforcement for concrete work
- erecting formwork for concrete work
- carrying out concrete work
- stripping formwork from concrete work
- cleaning-up after completing concrete work.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- rules and guidelines for using explosive power tools under applicable Commonwealth, state or territory legislation, standards and codes of practice. These include requirements for work health and safety and protection of the environment:
 - job safety analyses (JSAs)

- safe work method statements (SWMSs)
- safety data sheets (SDSs)
- safety manuals and instructions for plant, tools and equipment
- signage and barricades
- personal protection equipment (PPE)
- working at heights requirements
- environmental and work site safety plans
- requirements of state and territory regulators, Australian standards and the National Construction Code (NCC) relating to carrying out concrete work
- site and equipment safety requirements, including:
 - job safety analysis (JSA) and safe work method statements (SWMS)
 - safety data sheets (SDS)
- workplace requirements for all aspects of carrying out concrete work including interpreting work orders and reporting problems
- interpreting engineering drawings and specifications
- processes for determining materials quantities
- quality requirements
- concreting work, including:
 - beams
 - columns
 - footings
 - footpaths
 - lintels
 - pads
 - ramps
 - repairing of kerb and channel
 - slabs on ground
 - stairs
 - structural members
 - suspended slab
 - walls
- concrete characteristics and properties
- concreting principles
- steel reinforcement characteristics
- structural technology principles relative to minor concreting works
- concreting equipment types, characteristics, technical capabilities and limitations, including:
 - bolt cutters
 - brushes
 - buckets
 - chutes

- curing agent applicator
- edging tools
- floats
- hammers
- hoses
- kibble
- mesh guillotine
- nips
- rakes
- reinforcement benders
- rods
- screeds
- short handle shovels
- shutters
- sponges
- steam generator
- tarpaulins
- tremies
- trowels
- vibrators
- wheelbarrows
- types of concreting formwork, their applications and installation methods, including:
 - expanded polystyrene
 - fiberglass
 - masonry
 - plywood
 - steel shutters
 - structural cardboard
 - timber
- concreting processes and equipment, including:
 - setting out
 - erecting formwork
 - transporting concrete, including:
 - crane and kibble
 - pre-mix truck
 - pumping equipment
 - wheelbarrow
 - placing concrete, including:
 - kibble
 - pumping equipment

- shoveling
- tremies
- truck placed
- vibrating
- wheelbarrow
- materials handling methods
- finish techniques, including:
 - broom finished
 - brushed
 - using bull float
 - using mechanical troweling machine
 - using steel trowel
 - using wood float
- curing, including:
 - applied moisture
 - coating with a membrane
 - curing compound
 - flooding
 - plastic sheeting
 - steam.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Candidates must have access to:

- industry-standard equipment used to perform the tasks specified in performance evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCO4001 Supervise concreting work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCO4001A Supervise concreting work.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to oversee on-site preparation and finish of concreting work. It includes initiating, supervising and monitoring concreting operations to ensure completion within scheduled timeframes and quality standards.

This unit of competency applies to builders, site supervisors and other industry personnel responsible for concreting work on residential and commercial projects.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Concreting.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Supervise preparation 1.1 Communicate work instructions to team members and

- for concreting work.
- invite and address questions.
- 1.2 Confirm team members' understanding of work health and safety (WHS) and environmental requirements.
 - 1.3 Confirm team members' selection of materials, tools and equipment is consistent with job requirements.
 - 1.4 Process reports of faulty equipment and tools and source replacements as required.
 - 1.5 Manage and monitor team members' manual handling of equipment and tools to ensure workplace safety requirements are met.
- 2 Supervise on-site preparation for concrete pour.
- 2.1 Direct and monitor site excavation and preparation of sub-grade to meet safety, quality and scheduled timeframe requirements.
 - 2.2 Supervise, monitor and direct formwork installation to comply with work plans and specifications.
 - 2.3 Check levels for finish heights against datum.
 - 2.4 Inspect placement of reinforcing to ensure compliance with specifications.
 - 2.5 Confirm site and preparation work is ready for concrete pour.
- 3 Monitor and manage concrete material delivery.
- 3.1 Monitor weather conditions and apply contingencies as required to ensure safety, quality and timeliness of project completion.
 - 3.2 Supervise concrete pour and compacting and levelling procedures to comply with specifications.
 - 3.3 Manage concrete finish in compliance with specifications.
 - 3.4 Check completed work for compliance and coordinate team members to address areas of non-compliance.
 - 3.5 Monitor weather conditions and apply contingencies as required to ensure safety, quality and timeliness of project completion.

- | | | | |
|---|---|-----|---|
| 4 | Monitor and manage concreting on-site work. | 4.1 | Monitor weather conditions and apply contingencies as required to ensure safety, quality and timeliness of project completion. |
| | | 4.2 | Supervise concrete pour and compacting and levelling procedures to comply with specifications. |
| | | 4.3 | Manage concrete finish in compliance with specifications. |
| | | 4.4 | Check completed work for compliance and coordinate team members to address areas of non-compliance. |
| 5 | Supervise site clean-up. | 5.1 | Arrange for clean-up of tools and equipment, and disposal and removal of excess material to meet organisation quality processes and environmental requirements. |
| | | 5.2 | Organise safe storage and protection of tools, equipment and materials. |
| | | 5.3 | Debrief team members and action identified opportunities for learning or improvement. |
| | | 5.4 | Complete and process project documentation according to workplace and project requirements. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to:
 - interact with team members and suppliers and choose appropriate language to give instructions and feedback
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO4001A Supervise concreting work.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCO4001 Supervise concreting work

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO4001A Supervise concreting work.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by supervising concreting works for three different concreting projects.

In doing this, the candidate must:

- supervise team members ensuring timely completion of each project to required quality standards and specifications
- manage the accurate placement of formwork, reinforcing, services and penetrations
- supervise accurate transfer of datum, finish heights of concrete, concrete compaction and concrete finishes
- organise concrete testing and documenting results.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- application, processes and techniques of concreting:
 - suspended slabs
 - slabs on ground
- properties and limitations of concrete:
 - composition
 - slump test measurement
 - temperature
- principles of task management
- regulations, standards and codes of practice relevant to concreting work
- organisational quality assurance requirements
- team leadership strategies
- operational and functional factors of concreting tools and equipment
- workplace safety:
 - hierarchy of control

- hazardous manual tasks
- working at heights
- hazardous materials and substances
- personal protective equipment (PPE)
- sustainability and environmental requirements:
 - clean-up management
 - dust suppression
 - noise management
 - stormwater management
 - vibration management
 - waste management.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government legislation
- current industry and Australian codes and standards
- project schedules, construction drawings, site plans and specifications
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- tools and equipment to supervise safe concrete works and document test outcomes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3014 Remove non-friable asbestos

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified pre-requisite unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCE3014A Remove non-friable asbestos.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to remove non-friable asbestos containing material (ACM).

It includes preparing, containing and removing non-friable ACM, and knowledge of decontamination and disposal requirements.

Site location can be a real workplace or simulated environment that may include domestic or commercial premises, a demolition site, a new worksite or an existing structure being renovated, extended, restored or maintained.

Project sites for removal of non-friable asbestos include construction sites, ships and soils.

The model work health and safety (WHS) regulations and the Code of Practice: How to safely remove asbestos (2018) requires workers to hold certification for the class of licensed asbestos removal work they will be undertaking. Completion of this unit of competency is certification to undertake non-friable (Class B) removal work.

Occupational licenses are required nationally. This unit is required for all ACM removal workers engaged in the removal of more than ten square metres of non-friable ACM.

Candidates are advised to consult with the relevant state and territory regulatory authorities to confirm specific jurisdictional licensing requirements to remove non-friable ACM.

Pre-requisite Unit

CPCCWHS1001 Prepare to work safely in the construction industry

Unit Sector

Demolition

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Prepare for asbestos removal.	<p>1.1 Obtain work instructions and participate in review of asbestos removal control plan (ARCP) and safe work method statements (SWMS).</p> <p>1.2 Gather safety requirements and data from an on-site assessment and asbestos register where available.</p> <p>1.3 Use information sources to ensure the ARCP and SWMS are site-specific for the removal of asbestos materials.</p> <p>1.4 Select tools, equipment and personal protective equipment (PPE) consistent with job requirements to carry out tasks, check for serviceability, and rectify or report faults prior to commencement.</p> <p>1.5 Notify regulator, occupants, neighbours and other affected parties according to legislation and within limits of own responsibility and code of practice.</p> <p>1.6 Contribute to the preparation and use of an emergency plan, within limits of own responsibility and according to legislative and company requirements.</p> <p>1.7 Contribute to processes required to undertake air monitoring and to meet health monitoring requirements in line with level of authority and responsibility and regulatory requirements.</p>
2 Prepare asbestos removal site.	<p>2.1 Identify location of non-friable asbestos materials and confirm with supervisor location of site boundaries.</p> <p>2.2 Implement signage and barricade requirements to delineate the asbestos removal site according to ARCP.</p> <p>2.3 Prepare and place materials and equipment required for removal of ACM from site.</p>
3 Set up asbestos work area.	<p>3.1 Designate boundaries of asbestos work area according to ARCP requirements.</p> <p>3.2 Set up decontamination according to ARCP.</p>

- 3.3 Set up asbestos waste storage and waste transit route according to ARCP.
 - 3.4 Undertake processes to ensure the safety of the site, including deactivating or securing utilities where necessary prior to commencing work.
- 4 Remove non-friable asbestos.
 - 4.1 Fit-check respiratory protective equipment (RPE) and fit PPE.
 - 4.2 Wet down or spray work area with particle binder.
 - 4.3 Carry out asbestos removal ensuring airborne asbestos fibres are kept to a minimum (i.e. appropriate tools, wet removal, minimise breakage, good handling techniques).
 - 4.4 Contain, wrap or otherwise seal the wet asbestos, place into removal bags or bins, seal and label according to ARCP.
- 5 Carry out decontamination process.
 - 5.1 Carry out decontamination of the work area and tools according to ARCP.
 - 5.2 Carry out personal decontamination according to ARCP.
- 6 Clean up work area.
 - 6.1 Remove asbestos waste materials and equipment from the area according to ARCP.
 - 6.2 Store tools, plant and equipment according to manufacturer recommendations and regulatory requirements to ensure site is ready for clearance inspection.
 - 6.3 Take steps to ensure clearance inspection requirements are met, within the limits of own responsibility and to ensure clearance certificate is gained from a competent person or licensed asbestos assessor.
- 7 Complete regulatory processes
 - 7.1 Ensure clearance inspection is undertaken prior to removing signage, plant and equipment.

- 7.2 Contribute to the preparation and use of documentation for regulatory notification processes, within limits of own responsibility and according to legislative and company requirements.
- 7.3 Provide stakeholders with clearance inspection certificate prior to reoccupation, as required.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3014A Remove non-friable asbestos.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCDE3014 Remove non-friable asbestos

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified pre-requisite unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCDE3014A Remove non-friable asbestos.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must undertake two separate non-friable asbestos removal and disposal tasks.

This must include:

- planning and preparing for removal of non-friable asbestos
- preparing non-friable asbestos removal site and removal area
- isolating non-friable removal area
- carrying out non-friable asbestos removal process
- carrying out non-friable asbestos decontamination process
- cleaning up removal work area after removal of non-friable asbestos.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- range of materials manufactured using asbestos, the type of asbestos used in each material, and the usual applications associated with the material, together with an understanding of:
 - health effects caused by exposure to non-friable asbestos containing material (ACM) and requirements for safe handling and removal
 - health impacts on the community and requirements for safe handling and disposal

- hazards, including health hazards, associated with non-friable ACM and circumstances that may change the nature of ACM from non-friable to friable
- safe work methods for the removal of non-friable asbestos
- requirements of current legislation and standards
- handling requirements of differing types of asbestos materials
- work area procedures
- risk assessment processes and contingency planning, job safety analysis (JSA), safety data sheets (SDS), asbestos registers and register amendments and safe work method statements (SWMS) related to removal of non-friable asbestos
- materials storage and hazardous waste management
- method of operation, and cleaning, use and maintenance requirements of equipment
- techniques associated with removing asbestos
- types, characteristics, uses and limitations of plant and equipment involved in enclosing and removing asbestos
- workplace and equipment safety requirements, including other associated hazard areas
- purpose and application of documentation for notification; and use of asbestos removal control plan (ARCP) and clearance inspections.
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Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for removal of non-friable asbestos
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently approved for use in industry, as per codes of practice, Australian Standards, requirements of legislation, regulations and requirements of workplace policies and as required by state, territory and Commonwealth regulators.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3015 Remove friable asbestos

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3015A Remove friable asbestos.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to remove friable asbestos containing material (ACM).

It includes preparing, containing and removing friable ACM, and knowledge and application of decontamination and disposal requirements.

Site location can be a real workplace or simulated environment that may include domestic or commercial premises; a demolition site; or an existing structure being renovated, extended, restored or maintained.

Project sites for removal of friable asbestos include construction sites, ships, fences and soils.

The model work health and safety (WHS) regulations and the Code of Practice: How to safely remove asbestos (2018) requires workers to hold certification for the class of licensed asbestos removal work they will be undertaking. Completion of this unit of competency is certification to undertake friable (Class A) removal work.

Occupational licenses are required nationally. This unit is required for all ACM removal workers engaged in the removal of friable ACM.

Candidates are advised to consult with the relevant state and territory regulatory authorities to confirm specific jurisdictional requirements to remove non-friable ACM.

Pre-requisite Unit

CPCCWHS10 Prepare to work safely in the construction industry
01

CPCCE3014 Remove non-friable asbestos

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for asbestos removal.

- 1.1 Obtain work instructions and participate in review of asbestos removal control plan (ARCP) and safe work method statements (SWMS).
- 1.2 Gather safety requirements and data from an on-site assessment and asbestos register where available.
- 1.3 Use information sources to ensure the ARCP and SWMS are site-specific for the removal of asbestos materials.
- 1.4 Calculate required quantity of materials according to plans and specifications and ensure materials meet code of practice and regulatory requirements.
- 1.5 Identify and apply environmental requirements for the project according to environmental plans and regulatory obligations.
- 1.6 Contribute to processes required to undertake air monitoring and to meet health monitoring requirements in line with level of authority and responsibility and regulatory requirements.
- 1.7 Finalise preparation for the removal process and obtain authorisation according to legislative and company requirements and the ARCP.
- 1.8 Select plant, equipment and personal protective equipment (PPE) consistent with job requirements to carry out tasks, check for serviceability, and rectify or report faults prior to commencement.
- 1.9 Notify regulator, occupants, neighbours and other affected parties according to legislation and the code of practice and within scope of own responsibility.
- 1.10 Contribute to the preparation and use of an emergency plan within limits of own responsibility and according to legislative and company requirements.
- 1.11 Contribute to the preparation and use of a certified safety management systems (SMS) within limits of own responsibility and according to legislative and company requirements.

- 2 Prepare asbestos removal area and removal site.
 - 2.1 Identify location of friable and non-friable asbestos and confirm with supervisor location of site boundaries.
 - 2.2 Implement signage and barricade requirements to delineate the asbestos removal site according to the ARCP.
 - 2.3 Position and assemble decontamination unit to manufacturer requirements.
 - 2.4 Connect services to decontamination unit according to regulatory requirements and codes of practice.
 - 2.5 Test decontamination procedure within scope of own responsibility and according to workplace procedures and the ARCP.

- 3 Enclose removal site.
 - 3.1 Designate boundaries of asbestos work area according to ARCP requirements.
 - 3.2 Construct negative pressure enclosure.
 - 3.3 Undertake processes to ensure the safety of the site, including deactivating or securing utilities where necessary prior to commencing work.
 - 3.4 Follow requirements to enclose the removal site safely to prevent the further release of fibres according to the ARCP and legislative and company requirements.
 - 3.5 Identify types of enclosures, impact of the size of the removal on the methodology selected, and types and use of removal processes.
 - 3.6 Test integrity of enclosure by smoke test and ensure negative air pressure is maintained within the enclosure within limits of responsibility and in line with legislative requirements.
 - 3.7 Provide notification of proposed asbestos removal to the licensed assessor within required timeframe and limits of own responsibility.
 - 3.8 Establish asbestos waste storage and waste transit route according to the ARCP.

- 4 Carry out asbestos removal process.
 - 4.1 Fit-check respiratory protection equipment (RPE) and fit PPE.
 - 4.2 Carry out asbestos removal within enclosure ensuring airborne asbestos fibres are kept to a minimum by using appropriate tools, wet removal, and handling techniques.
 - 4.3 Contain and place removed friable asbestos, asbestos dust and debris into double-lined removal bags or bins, seal, label appropriately and remove from site according to regulatory requirements and the ARCP.
 - 4.4 Use manual-handling principles for bagged and sealed ACM wherever possible to prevent breakages of plastic.

- 5 Carry out decontamination process.
 - 5.1 Use decontamination unit according to manufacturer and regulatory requirements and codes of practice.
 - 5.2 Carry out decontamination of the work area according to ARCP.
 - 5.3 Carry out personal decontamination according to ARCP.
 - 5.4 Get approval to dismantle asbestos removal and decontamination equipment according to regulatory requirements and codes of practice.

- 6 Clean up work site.
 - 6.1 Remove asbestos and decontamination equipment from the area according to the ARCP and regulatory requirements and following clearance from the licensed asbestos assessor.
 - 6.2 Clear work area and dispose of materials according to legislation, regulations, codes of practice and job specification.
 - 6.3 Clean, check, maintain and store plant, tools and equipment according to manufacturer recommendations and standard work practices.
 - 6.4 Take steps to ensure clearance inspection requirements are met, within the limits of own responsibility and to ensure clearance certificate is gained from a competent

person or licensed asbestos assessor.

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| 7 Complete regulatory processes. | 7.1 | Ensure clearance inspection is undertaken prior to removing signage, plant and equipment. |
| | 7.2 | Contribute to the preparation and use of documentation for regulatory notification processes, within limits of own responsibility and according to legislative, company and regulatory requirements. |
| | 7.3 | Provide stakeholders with clearance inspection certificate prior to reoccupation, as required. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3015A Remove friable asbestos.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3015 Remove friable asbestos

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3015A Remove friable asbestos.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must undertake two different friable asbestos removal and disposal tasks.

Performance must include:

- erecting enclosures, installing negative air pressure units and decontamination units
- integrity testing of enclosures

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- range of materials manufactured using asbestos, the type and characteristics of asbestos used in each material, the usual applications associated with the material
- methods and purpose for assessing hazards relating to friable asbestos containing material (ACM), together with an understanding of:
 - health effects caused by exposure to ACM and requirement for safe handling and removal
 - health impacts on the community and requirement for safe handling and disposal
- decontamination techniques
- hazards, including health hazards associated with friable ACM, using enclosures and removing friable asbestos
- licensing requirements for the use of specific equipment, such as excavators
- requirements of current legislation and standards
- handling requirements of differing types of asbestos materials
- worksite and work area procedures

- risk assessment processes and contingency planning, job safety analysis (JSA), safety data sheets (SDS), asbestos registers and register amendments and safe work method statements (SWMS) related to removal of friable asbestos
- materials storage and hazardous waste management
- method of operation, cleaning, use and maintenance requirements of equipment
- demolition plant and equipment as applicable to asbestos removal only
- techniques associated with enclosing and removing asbestos, including:
 - use of large and small-scale enclosures for different sites
 - use of negative pressure exhaust units
 - encapsulation methods prior to removal
- types, characteristics, uses and limitations of plant and equipment involved in removing asbestos
- workplace and equipment safety requirements, including other associated hazard areas
- application of the documentation for notification; and use of ARCP, clearance inspections, visual and air-monitoring processes and clearance certificates
- use of certified WHS management system and emergency plan.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for removal of friable asbestos
- materials to build a negative pressure enclosure that meets negative pressure requirements for enclosing airborne asbestos fibres arising from asbestos removal
- negative air unit/s
- equipment such as manometer and smoke generator to validate negative pressure and no leaks from the enclosure
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently approved for use in industry, as per codes of practice, Australian Standards, requirements of legislation, regulations and requirements of workplace policies and as required by state, territory and Commonwealth regulators.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3016 Identify hazards on demolition sites and apply risk management strategies

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3016A Identify hazards on demolition sites and apply risk management strategies. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to identify hazards common to demolition work, and undiscovered hazards that may arise during the course of work on demolition sites. It includes assessing risks and applying risk management strategies according to compliance and workplace requirements.

It supports the induction procedure for specialist demolition workers before beginning work on site.

This unit does not replace requirements for completion of construction work health and safety (WHS) units.

Completion of the general construction induction training program specified by the model code of practice for construction work is required for any person who is to carry out construction work. Achievement of unit CPCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

CPCWHS20 Apply WHS requirements, policies and procedures in the construction
01 industry

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 | Review site and work plans. | 1.1 | Identify issues relating to the age and integrity of buildings and structures, and construction methods and materials used, and apply this to review potential risks. |
| | | 1.2 | Review approved demolition plan and safe work method statements (SWMS) and apply information relating to hazards and risk management strategies to participation in job briefing according to work role requirements. |
| | | 1.3 | Identify and clarify job roles and responsibilities for people involved in the demolition according to workplace procedures. |
| 2 | Apply WHS risk management strategies to work activities on demolition sites. | 2.1 | Identify and apply compliance, site and workplace requirements to work tasks and appropriate personal protective equipment (PPE). |
| | | 2.2 | Identify hazards that may cause trips, falls or falling objects and apply risk management strategies. |
| | | 2.3 | Identify hazards relating to hazardous substances and apply risk management strategies. |
| | | 2.4 | Identify hazards relating to structural composition and integrity of structures and apply risk management strategies. |
| | | 2.5 | Identify hazards relating to services and apply risk management strategies. |
| | | 2.6 | Identify hazards relating to the use of mobile and static plant, tools and equipment and apply risk management strategies. |
| | | 2.7 | Identify hazards relating to the use of high reach excavators and apply risk management strategies. |
| | | 2.8 | Identify hazards relating to noise, dust and vibrations and apply risk management strategies. |
| | | 2.9 | Identify hazards that may cause fire or explosions and apply risk management strategies. |

- 2.10 Monitor worksite during demolition process for signs of undiscovered hazards and apply risk management strategies.
 - 2.11 Report WHS hazards and incidents.
- 3 Apply public health and safety risk management strategies on demolition sites.
 - 3.1 Identify site boundaries and exclusion zones and implement strategies to prevent access by unauthorised persons.
 - 3.2 Identify site traffic access and egress points and pedestrian and vehicle routes and apply traffic management plans.
 - 3.3 Identify demolition activities with potential to cause dust, noise and vibrations and apply risk management strategies.
 - 3.4 Identify demolition activities which may result in falling structures, flying debris or with the potential to affect structural integrity of adjoining buildings and apply risk management strategies.
 - 3.5 Report public health and safety hazards and incidents.
- 4 Apply environmental risk management strategies on demolition sites.
 - 4.1 Identify and apply environmental compliance, site and workplace requirements to work tasks.
 - 4.2 Identify and apply strategies to maximise environmentally sound use of energy and water.
 - 4.3 Identify potential risks to air quality resulting from demolition work and apply risk management strategies.
 - 4.4 Identify potential risks associated with stormwater management and apply risk management strategies.
 - 4.5 Identify potential risks to groundwater and groundwater monitoring wells and apply risk management strategies.
 - 4.6 Identify potential risks to the environment resulting from removing and handling hazardous substances and waste materials and apply risk management strategies.
 - 4.7 Report environmental hazards and incidents.

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| 5 | Contribute to improvement of demolition risk management strategies. | 5.1 | Review demolition methods, procedures and risk management strategies and discuss with team members to develop ideas for improvements in risk management. |
| | | 5.2 | Undertake industry professional development activities relating to demolition risk management as required. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3016A Identify hazards on demolition sites and apply risk management strategies.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3016 Identify hazards on demolition sites and apply risk management strategies

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3016A Identify hazards on demolition sites and apply risk management strategies. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must identify two different hazards on two separate occasions and apply a risk management strategy for each hazard on each occasion.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- workplace safety risk management strategies for:
 - exposure to silica dust
 - exposure to loud noise
 - hazardous manual tasks
 - trips or falls
 - air quality
- demolition methods and procedures
- general construction terminology
- hazards occurring and risk management strategies used on demolition sites:
 - falling objects
 - flying debris
 - structural composition hazards
 - services hazards
 - fire or explosion risk
 - stormwater management

- groundwater monitoring
- traffic management
- types of plant, tools and equipment applicable to demolition tasks:
 - applications of each tool or piece of equipment
 - maintenance requirements
 - safe methods of operation for different demolition tasks.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- demolition worksite/s and specifications for identifying hazards and applying risk management strategies
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3017 Select and use hand tools and equipment for demolition tasks

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3017A Select and use hand tools and equipment for demolition tasks. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to select and use hand tools and equipment safely and effectively to complete different demolition tasks.

It includes removing fixtures and fittings, ceilings, walls, floors and floor support systems; pulling apart equipment; knocking down structures; and loading out rubbish; using hand tools and equipment for on-site demolition tasks on public, residential, commercial and industrial structures of all types, including chemical processing plants.

These tasks may be completed at ground level, at heights, over water, under water or underground and in confined spaces, on new construction sites or on existing structures being removed, renovated or extended.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit CPCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

CPCWHS20 Apply WHS requirements, policies and procedures in the construction
01 industry

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|---|
| 1 Plan and prepare for work. | 1.1 Review work instructions to select hand tools and equipment in accordance with work health and safety (WHS) and environmental requirements. |
| | 1.2 Identify, select and fit personal protective equipment (PPE). |
| | 1.3 Prepare work area for the use of demolition hand tools and equipment. |
| 2 Identify and check tools and equipment. | 2.1 Identify and check hand tools and equipment to be used in the demolition process for serviceability and rectify and report faults. |
| | 2.2 Identify functions and methods of operation of demolition tools and equipment from specifications, standards and manufacturer instructions. |
| | 2.3 Complete pre-operational checks according to manufacturer recommendations. |
| 3 Complete demolition tasks. | 3.1 Conduct worksite inspection and assess hazards associated with individual demolition tasks immediately prior to commencing work. |
| | 3.2 Use tools and equipment for their intended purpose in demolition tasks. |
| | 3.3 Communicate work progress and any hazards or issues arising during work tasks with work team. |
| | 3.4 Place tools and equipment in safe locations when not in immediate use. |
| 4 Clean up work area. | 4.1 Clear work area and sort materials for reuse or recycling and remove and dispose of waste using safe manual-handling techniques. |
| | 4.2 Clean, check, maintain and store hand tools and |

equipment according to manufacturer recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3017A Select and use hand tools and equipment for demolition tasks.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3017 Select and use hand tools and equipment for demolition tasks

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3017A Select and use hand tools and equipment for demolition tasks. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must select and use hand tools and equipment for an on-site demolition task and remove each of the following at least once:

- fixtures and fittings
- a ceiling of at least 10 square metres
- an internal load bearing wall of at least 10 square metres
- flooring and flooring support system covering at least 3 square metres
- knock down a small structure of at least 10 square metres
- load out a minimum of one cubic metre of rubbish.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- general construction terminology
- hazards that may exist or arise on demolition sites, including those associated with the use of demolition tools and equipment
- procedures for:
 - environmentally friendly waste management
 - managing risks and hazards on demolition sites
 - sorting and storing reusable and recyclable materials
- types of information required to plan and prepare for safe and effective completion of demolition tasks

- types of industry-recognised portable power tools, hand tools and equipment applicable to demolition tasks:
 - applications of each tool or piece of equipment
 - maintenance requirements
 - safe methods of operation for different demolition tasks
- technology types and operation used in demolition.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksites and specifications for using demolition hand tools and equipment
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3018 Select and use small plant and equipment for demolition tasks

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3018A Select and use small plant and equipment for demolition tasks. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to select and use small plant and equipment safely and effectively to complete individual demolition tasks, such as breaking concrete, stripping out interior of buildings, pulling down walls and separating waste for recycling.

The unit applies to workers performing on-site specialist demolition work using powered small plant and equipment on public, residential, commercial and industrial buildings.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

CPCWHS20 Apply WHS requirements, policies and procedures in the construction
01 industry

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|--|
| 1 Plan and prepare for work. | 1.1 Obtain, confirm and apply work instructions to planning and preparation, using required information, and in consultation with colleagues or supervisors. |
| | 1.2 Complete tasks according to regulatory, legislative and workplace policies and requirements. |
| | 1.3 Identify and apply work health and safety (WHS) requirements to task planning according to safety plans. |
| | 1.4 Identify and apply environmental requirements according to environmental plans. |
| | 1.5 Identify, select and fit personal protective equipment (PPE). |
| 2 Identify and check small plant and equipment. | 2.1 Identify and check small plant and equipment to be used in the demolition process for serviceability and rectify and report faults. |
| | 2.2 Identify functions and methods of operation of demolition small plant and equipment from specifications, standards and manufacturer instructions. |
| | 2.3 Identify and apply specific WHS requirements for the selected small plant and equipment. |
| 3 Complete demolition tasks. | 3.1 Obtain confirmation from supervisor and regulatory authorities that existing services have been disconnected. |
| | 3.2 Conduct worksite inspection and assess hazards associated with individual demolition tasks immediately prior to commencing work according to workplace procedures. |
| | 3.3 Amend safe demolition work method if required and confirm with colleagues or supervisor. |
| | 3.4 Prepare work area for the use of demolition small plant and equipment. |

- 3.5 Select small plant and equipment that meet the requirements of the demolition task.
 - 3.6 Complete pre-operational checks according to manufacturer recommendations.
 - 3.7 Use small plant and equipment for their intended purpose in demolition tasks.
 - 3.8 Communicate work progress and hazards or issues arising during work tasks with work team.
 - 3.9 Place small plant and equipment in safe locations when not in immediate use.
- 4 Clean up work area.
- 4.1 Clear work area and sort materials for reuse, recycling or removal and dispose of waste using safe manual-handling or plant techniques.
 - 4.2 Clean, check, maintain and store small plant and equipment according to manufacturer recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3018A Select and use small plant and equipment for demolition tasks.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3018 Select and use small plant and equipment for demolition tasks

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3018A Select and use small plant and equipment for demolition tasks. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must select and use small plant and equipment to complete three of the following on-site demolition tasks:

- break a minimum of two square metres of concrete
- dismantle 20 square metres of purlins and wall or roof sheeting
- demolish 10 lineal metres of three-metre high masonry wall
- identify services infrastructure in a minimum 20 square-metre section of a building, and remove the infrastructure (ducting, cabling, pipework) for one service
- remove wall cladding and floor coverings from a minimum 10 square-metre section of a building
- remove a ceiling from a 20 square-metre section of a building.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- general construction terminology
- hazards that may exist or arise on demolition sites, including those associated with the use of demolition small plant and equipment
- procedures for:
 - environmentally friendly waste management
 - managing risks and hazards on demolition sites
 - sorting and storing reusable and recyclable materials
- types of information required to plan and prepare for safe and effective completion of demolition tasks

- types of small plant and equipment applicable to demolition tasks:
 - applications of each type of small plant or piece of equipment
 - maintenance requirements
 - safe methods of operation for different demolition tasks.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for selecting and using small plant and equipment for demolition tasks
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3019 Demolish small buildings and structures using hand tools and small plant and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3019A Demolish small buildings and structures using hand tools and small plant and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to select and use hand tools, small plant and equipment safely and effectively to demolish small buildings and structures. Manual demolition processes include dismantling or demolishing and removing materials and component parts of a building or structure using only hand tools, small plant and equipment.

The unit applies to workers performing on-site specialist demolition work using powered small plant and equipment on public, residential, commercial and industrial buildings.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

CPCWHS20 Apply WHS requirements, policies and procedures in the construction
01 industry

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------------------|---|
| 1 Plan and prepare for work. | 1.1 Obtain work instructions using required information, confirm and apply to planning and preparation. |
| | 1.2 Complete tasks according to regulatory, legislative and workplace policies and requirements. |
| | 1.3 Identify and apply work health and safety (WHS) requirements to task planning. |
| | 1.4 Select and check hand tools, small plant and equipment to carry out tasks consistent with job requirements, check for serviceability, and rectify and report faults before work begins. |
| | 1.5 Identify environmental requirements for the project. |
| | 1.6 Identify, select and fit personal protective equipment (PPE). |
| 2 Prepare demolition site. | 2.1 Confirm demolition tasks and determine requirements of site demolition plan. |
| | 2.2 Conduct site inspection to determine condition of worksite and surrounds before work begins. |
| | 2.3 Obtain confirmation from supervisor and regulatory authorities that relevant services have been disconnected and identify services that will remain live on the demolition site. |
| | 2.4 Identify hazardous material for separate handling. |
| | 2.5 Identify requirements for safe work at heights, including fall protection devices, and ensure these are installed. |
| | 2.6 Ensure small plant and equipment are positioned in operating locations and arrange appropriate exclusion zones and traffic control. |
| | 2.7 Protect and secure site according to compliance requirements and unauthorised access is prevented. |

- | | |
|--|--|
| 3 Dismantle or demolish building components. | 3.1 Dismantle or demolish and remove building components in a directed sequence according to site demolition plan and safe work method statements (SWMS). |
| | 3.2 Operate selected types of small plant to carry out demolition of building components. |
| | 3.3 Maintain communication with team members during the demolition process. |
| | 3.4 Monitor worksite conditions and progress in consultation with team members and stop work or adjust techniques as required. |
| 4 Sort and store demolition materials and waste. | 4.1 Relocate removed components to storage or disposal area. |
| | 4.2 Handle materials and building components safely and effectively using selected material handling techniques. |
| | 4.3 Identify materials and components for salvaging and handle, store and stack these ready for transport according to standard material handling practices. |
| 5 Clean up work area. | 5.1 Clear work area and dispose, reuse or recycle materials. |
| | 5.2 Clean, check, maintain and store plant, tools and equipment. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria:

- numeracy skills to:
 - check levels of lubricants in equipment
 - estimate weights of volumes of demolition debris and recyclable materials
 - perform measurements and calculations associated with work, such as when determining specified length of wall to be removed
- writing skills to complete:
 - pre-operational checklists and equipment fault forms.
 -

Unit Mapping Information

Supersedes and is equivalent to CPCCE3019A Demolish small buildings and structures using hand tools and small plant and equipment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3019 Demolish small buildings and structures using hand tools and small plant and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3019A Demolish small buildings and structures using hand tools and small plant and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must use hand tools, small plant and equipment to demolish a small building or structure, including removing at least four of the following components:

- fixtures and fittings
- a pitched metal/tiled roof
- trusses
- ceiling
- external and internal walls
- floor and floor support system.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- general construction terminology
- hazards associated with demolition tasks
- demolition processes and techniques for small structures
- procedures for material storage and environmentally friendly waste management
- types of small plant, tools and equipment used in the demolition of small buildings:
 - applications
 - characteristics
 - limitations

- maintenance requirements
- methods of operation
- quality requirements relating to the demolition of small structures
- work and equipment safety requirements that apply to the demolition of small buildings and structures.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for using hand tools, small plant and equipment to demolish small buildings and structures
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition sites.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3020 Select and use tools and equipment for hot work in the demolition industry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3020A Select and use tools and equipment for hot work in the demolition industry. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to cut materials using cutting processes that create a heat source that could cause an ignition. The unit covers the safe operation and maintenance of tools and equipment for hazardous demolition hot work.

It includes the safe on-site operation and maintenance of tools and equipment used for hazardous demolition hot work.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Hot work permits and licenses for the operation of specialised hot-work equipment are required in different states and territories.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

CPCWHS20 Apply WHS requirements, policies and procedures in the construction
01 industry

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---|-----|--|
| 1 | Plan and prepare for work. | 1.1 | Obtain, confirm and apply work instructions to planning and preparation, using required information, and in consultation with colleagues or supervisors. |
| | | 1.2 | Complete tasks according to regulatory, legislative and workplace policies and requirements. |
| | | 1.3 | Identify and apply site work health and safety (WHS) requirements to task planning according to safety. |
| | | 1.4 | Identify, select and fit personal protective equipment (PPE). |
| | | 1.5 | Conduct worksite inspection and assess hazards associated with individual demolition hot work tasks immediately prior to commencing work. |
| | | 1.6 | Identify and apply environmental requirements according to environmental plans. |
| | | 1.7 | Obtain and check permits for hot work and licences for specialised equipment before starting work. |
| 2 | Select tools and equipment and prepare for use. | 2.1 | Select tools and equipment for different hot work tasks according to manufacturer recommendations. |
| | | 2.2 | Complete pre-operational checks and maintenance requirements according to manufacturer recommendations and rectify and report faults. |
| | | 2.3 | Identify and apply specific WHS requirements and safe methods of operation of tools and equipment for hot work from manufacturer instructions. |
| 3 | Complete cutting, grinding and hot work. | 3.1 | Obtain confirmation from supervisor and regulatory authorities that existing services have been disconnected. |
| | | 3.2 | Amend safe demolition work method statement if required and confirm with colleagues or supervisor. |
| | | 3.3 | Prepare work area for hot work according to site safety |

requirements.

- 3.4 Use tools and equipment for their intended purpose in hot work demolition tasks.
 - 3.5 Communicate work progress and hazards or issues arising during work tasks with work team.
 - 3.6 Place tools and equipment in safe locations when not in immediate use.
- 4 Clean up work area.
- 4.1 Clear work area and sort materials for reuse or recycling and remove or dispose of waste using safe manual-handling techniques.
 - 4.2 Clean, check, maintain and store tools and equipment according to manufacturer recommendations.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria:

- learning skills to:
 - recognise signs indicating undiscovered hazards on a demolition site, for example presence of residual fuel
 - respond to change, such as differences in current worksite environmental and sustainability requirements
- numeracy skills to:
 - check levels of lubricants in tools
 - perform measurements and calculations associated with work, such as when determining specified length of wall to be removed
- writing skills to:
 - complete pre-operational checklists and simple equipment fault forms.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3020A Select and use tools and equipment for hot work in the demolition industry.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3020 Select and use tools and equipment for hot work in the demolition industry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3020A Select and use tools and equipment for hot work in the demolition industry. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must select and use tools and equipment for hot work in the demolition industry. The candidate must perform the following:

- set up and use oxy-fuel gas cutting equipment to cut through one 200 mm x 200 mm structural steel element
- set up and use a demolition saw to cut through:
 - a one metre length of 50 mm concrete ground slab
 - an 800 mm width of metal cladding
- set up and use an angle grinder to cut through an 800 mm width of metal cladding
- use a lower explosive level (LEL) unit to identify LEL at the locations for two different hot work tasks.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- general construction terminology
- hazards that may exist or arise on demolition sites, especially those associated with hot work:
 - build-up of combustible materials
 - chemical compounds
 - drums
 - dust
 - gas

- residual fuels, for example, in pipework to be cut
- sparks
- storage tanks
- procedures for:
 - environmentally sound waste management
 - managing risks and hazards on demolition sites
 - sorting and storing reusable and recyclable materials
- types of information required to plan and prepare for safe and effective completion of demolition tasks
- types of tools and equipment used for cutting, grinding and hot work in the demolition industry:
 - applications of each type of tool or piece of equipment
 - maintenance requirements
 - safe methods of operation for different cutting, grinding or hot work tasks.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for selecting and using tools and equipment for demolition hot work
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3021 Operate demolition material crushing plants

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3021A Operate demolition material crushing plants. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to operate a stationary or mobile crushing plant to produce crushed demolition materials in a range of sizes. It includes the preparation, inspection, maintenance, operation and shut down of a crushing plant. It may include working with others and as a member of a team.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

CPCWHS20 Apply WHS requirements, policies and procedures in the construction
01 industry

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------------------|---|
| 1 Plan and prepare for work. | 1.1 Access and apply compliance requirements relevant to crushing and screening plant operations. |
|------------------------------|---|

- 1.2 Obtain, confirm and apply work requirements using required information for planning and preparation.
 - 1.3 Complete tasks according to manufacturer's instructions and regulatory, legislative and workplace policies and requirements.
 - 1.4 Follow work health and safety (WHS) requirements.
 - 1.5 Select plant and equipment to carry out tasks that are consistent with job requirements and check for serviceability and rectify and report faults before work begins.
 - 1.6 Identify environmental requirements for the project.
 - 1.7 Identify, select and fit personal protective equipment (PPE).
 - 1.8 Conduct crushing plant pre-start, start-up, run and shutdown procedures to ensure correct operational condition according to manufacturer requirements, and identify and correct faults or report these to supervisor.
 - 1.9 Prepare work area and equipment and plan sequence of tasks in coordination with personnel.
- 2 Operate crushing plant.
- 2.1 Select and modify operating technique to meet changing work conditions according to manufacturer recommendations.
 - 2.2 Direct uncrushed materials into hopper and maintain feed of uncrushed materials according to manufacturer instructions.
 - 2.3 Monitor conduct and control operations within the equipment limitations and communicate with relevant personnel to maintain crushing and screening efficiency and effectiveness.
 - 2.4 Stop and clear crushing of blocked materials and restart as required.
 - 2.5 Maintain crushing plant settings.
 - 2.6 Complete work within the operating capacity of the allocated equipment.

- | | | | |
|---|--|-----|---|
| 3 | Carry out post-operational procedures. | 3.1 | Inspect plant and equipment and report faults. |
| | | 3.2 | Conduct operational maintenance, servicing, lubricating and housekeeping tasks. |
| | | 3.3 | Maintain and process operational records and report. |
| | | 3.4 | Shut down crushing plant according to site safety and operation plan. |
| | | | |
| 4 | Clean up work area. | 4.1 | Clear work area and dispose of, reuse or recycle materials. |
| | | 4.2 | Clean, check, maintain and store tools and equipment. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria:

- learning skills to:
 - evaluate own actions and make judgements about performance and necessary improvements
 - respond to change, such as differences in current worksite environmental and sustainability requirements
- numeracy skills to:
 - estimate weight of volumes of demolition debris
 - perform measurements and calculations associated with work, such as determining maximum load capacity of equipment.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3021A Operate demolition material crushing plants.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3021 Operate demolition material crushing plants

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3021A Operate demolition material crushing plants. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must operate a demolition material crushing plant to process a minimum of 100 tonnes of demolition material into two different nominal sizes of crushings, of between 5 mm and 100 mm.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- construction terminology
- procedures for material storage and environmentally friendly waste management
- quality requirements relating to products of crushing operations
- types, characteristics, uses and limitations of plant and equipment involved in the conduct of crushing operations:
 - hazards associated with the conduct of crushing operations
 - method of operation and maintenance requirements of crushing plant and equipment
 - techniques associated with the conduct of crushing operations
- workplace and equipment safety requirements that apply to the operation of a demolition material crushing plant.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for operating a demolition material crushing plant
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3022 Manage demolition recyclable waste materials and contaminated soil using load shifting equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3022A Manage demolition recyclable and waste materials using load shifting equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to organise the removal of different types of demolition recyclable and waste materials and contaminated soil. It involves the operation of a range of load shifting equipment on demolition sites and incorporates knowledge of recyclable materials and the safe disposal of hazardous materials.

The unit does not provide training and assessment for operation of individual items of plant.

Candidates may only enrol in this unit after successfully completing separate operator training and assessment that confirms the capability of the person to safely operate the items of plant covered in this unit.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authority.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare for work.
 - 1.1 Obtain work instructions using required information, confirm and apply to planning and preparation.
 - 1.2 Complete tasks according to manufacturer specifications and regulatory, legislative and workplace policies and requirements.
 - 1.3 Identify and apply work health and safety (WHS) requirements to task planning.
 - 1.4 Select load shifting equipment, associated attachments and emergency and personal protective equipment (PPE) to maximise efficiency and effectiveness of transportation.
 - 1.5 Present licence to operate specific plant to relevant personnel for compliance inspection.
 - 1.6 Identify and deal with potential hazards and risks.
 - 1.7 Identify and apply environmental requirements to work planning.
 - 2 Perform routine checks on load shifting and other equipment.
 - 2.1 Inspect load shifting equipment and rectify or report faults as required.
 - 2.2 Conduct service checks and test load shifting equipment systems to ensure compliance with manufacturer specifications.
 - 2.3 Check emergency and PPE to ensure it is serviceable.
 - 2.4 Check associated equipment to ensure that it is operational and complies with manufacturer specifications.
 - 3 Organise materials and equipment for loading.
 - 3.1 Confirm with relevant personnel worksite procedures for segregating and locating recyclable and waste demolition materials.
 - 3.2 Identify recyclable materials to be loaded and check to ensure integrity of on-site sorting, as required.
 - 3.3 Identify waste materials to be loaded and check to ensure

- integrity of containment, as required.
- 3.4 Determine loading procedures according to material or waste type.
 - 3.5 Park load shifting equipment or set up in a loading position that ensures efficiency and safety of loading.
 - 3.6 Erect barriers and warning signs at loading sites to ensure safety of surrounding personnel.
- 4 Load and move materials.
- 4.1 Load materials safely and efficiently according to type and using an approved loading method to maintain integrity.
 - 4.2 Maintain visual checks of load and surrounding environment to identify and avoid, minimise or remedy potential hazards.
 - 4.3 Maintain clear communication with relevant personnel.
 - 4.4 Check load to ensure it conforms to equipment capacity requirements, manufacturer specifications, and requirements of relevant legislation and codes.
 - 4.5 Operate and drive equipment in a safe and efficient manner following all road and traffic regulations.
 - 4.6 Move and secure materials safely.
- 5 Unload and store materials.
- 5.1 Unload materials safely and efficiently in designated area according to type and using an approved unloading method to maintain integrity.
 - 5.2 Maintain visual checks to identify and remedy potential hazards during unloading.
 - 5.3 Stack or house load at destination.
- 6 Shut down and secure load shifting equipment.
- 6.1 Park or store equipment in a safe location to avoid damage to equipment or obstruction of surrounding site activity.
 - 6.2 Complete shutdown procedures.

- 6.3 Secure and store equipment in a manner that prevents unauthorised access or use.
- 7 Carry out basic housekeeping and maintenance.
 - 7.1 Clean equipment to remove debris and contamination and to ensure safe operating procedures.
 - 7.2 Conduct service checks.
 - 7.3 Report equipment faults and defects to relevant personnel.
 - 7.4 Complete record of moving activities promptly.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3022A Manage demolition recyclable and waste materials using load shifting equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3022 Manage demolition recyclable waste materials and contaminated soil using load shifting equipment

Modification History

.Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3022A Manage demolition recyclable and waste materials using load shifting equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must manage a minimum of 10 cubic metres of demolition recyclable and waste materials using load shifting equipment, including:

- two items of earth moving equipment from the following list:
 - dozer
 - front-end loader
 - excavator
 - skid steer loader
 - tailgate loader
- one material separator from the following list:
 - grapple
 - bucket (plant attachments), screening or skeleton
- one truck type from the following list:
 - articulated truck
 - open-bodied truck, including hook lift, pump and vacuum
 - rigid truck.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation

- compliance requirements for handling and transporting materials, which include dangerous goods and hazardous substances
- driving procedures for different types of load shifting equipment, including:
 - licence requirements
 - map reading
 - road laws
- hazards and risks associated with handling and transporting materials and management strategies:
 - emergency response procedures
 - hierarchy of control
- manual and mechanical loading and unloading methods
- types of loading equipment, including equipment load weight requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate has access to:

- worksite/s and specifications for managing demolition recyclable and waste materials using load shifting equipment
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3023 Operate skid steer loaders at ground level on demolition sites

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3023A Operate skid steer loaders at ground level on demolition sites. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to operate a skid steer loader at ground level in the demolition industry. It includes planning and preparing; conducting machine pre-operational checks; preparing a site for the demolition process; removing demolition debris; selecting, removing and fitting loader attachments; removing demolition materials and waste; relocating skid steer loaders; and carrying out machine operator maintenance.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare for work.
 - 1.1 Interpret and apply compliance requirements to skid steer loader operations.
 - 1.2 Complete tasks according to manufacturer specifications and regulatory, legislative and workplace policies and requirements.
 - 1.3 Obtain work instructions, confirm with team members and other relevant personnel, and apply to planning and preparation.
 - 1.4 Identify and apply work health and safety (WHS) requirements to task planning.
 - 1.5 Identify environmental requirements for the project according to environmental plans.
 - 1.6 Identify, select and fit personal protective equipment (PPE).
 - 1.7 Check maintenance tools and equipment for serviceability and rectify and report faults.
 - 1.8 Conduct skid steer loader pre-start, start-up, park and shutdown operational checks.
 - 1.9 Check skid steer loader controls and functions for serviceability and rectify and report faults.

- 2 Select, check and fit attachments.
 - 2.1 Select skid steer loader attachments to carry out tasks consistent with job requirements.
 - 2.2 Check attachments and connections for excessive wear and replace and report these as required.
 - 2.3 Fit attachments securely according to safe work method, and fit safety pins or clips.
 - 2.4 Check hydraulic components and rectify faults or replace components and report these as necessary.
 - 2.5 Test operation of hydraulic system before applying load.
 - 2.6 Test attachment operation by raising and lowering attachment and ensure attachment is locked in raised position for travel.

- 2.7 Remove, clean and store attachments.
- 3 Prepare demolition site.
 - 3.1 Determine and discuss requirements of site demolition plan with team members.
 - 3.2 Conduct site inspection to determine condition of worksite and surrounds before work begins and amend and approve safe work method statement (SWMS) as required.
 - 3.3 Obtain confirmation from supervisor and regulatory authorities that all existing above and below ground services have been disconnected.
 - 3.4 Identify hazardous material for separate handling according to workplace requirements and instructions.
 - 3.5 Position mechanical equipment and plant in operating locations and arrange appropriate exclusion zone and traffic control.
- 4 Operate skid steer loader for demolition process.
 - 4.1 Identify and apply skid steer loader general operating techniques to achieve optimum output while achieving specified tolerances.
 - 4.2 Identify site hazards associated with skid steer loader demolition operations and follow safe operating techniques to minimise risks.
 - 4.3 Move skid steer loader safely between work locations, observing codes and traffic management requirements.
 - 4.4 Implement control measures to manage hazards arising from demolition process according to the demolition plan, safe work methods and regulatory requirements.
 - 4.5 Assess demolition tasks immediately prior to starting and review SWMS to incorporate management of previously undiscovered hazards.
 - 4.6 Operate skid steer loader at ground level to remove demolition debris using suitable attachments according to approved demolition plan and current safe work method.
 - 4.7 Maintain communication with team members during the

- demolition process.
- 4.8 Monitor worksite conditions and progress in consultation with team members and stop work or adjust techniques as required.
- 5 Carry out machine operator inspection and maintenance tasks.
- 5.1 Park and shut down skid steer loader safely and remove attachments.
 - 5.2 Inspect skid steer loader for faults and remove and replace defective parts.
 - 5.3 Conduct regular programmed operator maintenance tasks.
- 6 Clean up work area.
- 6.1 Clear work area and sort materials and waste and position for removal, as required, and according to site demolition project environmental management plan.
 - 6.2 Clean, check, maintain and store maintenance tools and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3023A Operate skid steer loaders at ground level on demolition sites.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3023 Operate skid steer loaders at ground level on demolition sites

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3023A Operate skid steer loaders at ground level on demolition sites. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must operate a skid steer loader from ground level to complete the following demolition tasks:

- demolish 30 square metres of minor non-structural material
- separate, sort, lift, transfer and load for transport a minimum of 10 cubic metres of recyclable and waste material.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- general construction terminology
- hazards associated with the operation of skid steer loaders from ground level on residential, commercial and industrial demolition sites
- methods for materials storage and disposal, including environmentally friendly waste management
- method of operation, and maintenance requirements, of skid steer loader and attachments
- types, characteristics, uses and limitations of skid steer loaders in the demolition industry
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for operating skid steer loaders at ground level on demolition sites
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3024 Operate mobile plant on suspended floors on demolition sites

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Criteria numbering rectified in Elements 3 and 6.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3024A Operate mobile plant on suspended floors on demolition sites. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to operate mobile plant on suspended floors to demolish building elements on or above the same suspended floor. It includes planning and preparing; conducting machine pre-operational checks; preparing a site for the demolition process; following demolition procedures for different building elements; selecting, removing and fitting attachments; removing demolition materials and waste; relocating plant; and carrying out machine operator maintenance.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|------------------------------------|------|---|
| 1 | Plan and prepare for work. | 1.1 | Interpret and apply compliance requirements to mobile plant operations. |
| | | 1.2 | Complete tasks according to manufacturer specifications and regulatory, legislative and workplace policies and requirements. |
| | | 1.3 | Obtain work instructions from required information, confirm with team members and other relevant personnel, and apply to planning and preparation. |
| | | 1.4 | Follow instructions and advice from structural engineer regarding demolition techniques on suspended floors and load bearing capacities including pre- and post-tensioning and pre-cast floors. |
| | | 1.5 | Identify and apply work health and safety (WHS) requirements to task planning according to safety plans. |
| | | 1.6 | Confirm placement of mobile plant and allowable weight of demolition debris loads on suspended floors according to advice of structural engineer. |
| | | 1.7 | Identify environmental requirements for the project. |
| | | 1.8 | Identify, select and fit personal protective equipment (PPE). |
| | | 1.9 | Check tools and equipment for serviceability, and report or rectify faults. |
| | | 1.10 | Conduct required pre-start operator maintenance tasks. |
| | | 1.11 | Conduct mobile plant pre-start, start-up, park and shutdown operational checks. |
| | | 1.12 | Check mobile plant controls and functions for serviceability and rectify and report faults. |
| 2 | Select, check and fit attachments. | 2.1 | Select mobile plant attachments to carry out tasks consistent with job requirements. |
| | | 2.2 | Check arms and connections for excessive wear and |

- replace and report as required.
- 2.3 Fit attachments securely according to safe work method, and fit safety pins or clips.
 - 2.4 Check hydraulic components rectify faults or replace components and report on action taken.
 - 2.5 Test operation of hydraulic system before applying load.
 - 2.6 Test attachment operation by raising and lowering attachment and check attachment is locked in position for travel.
 - 2.7 Remove, maintain and store attachments.
- 3 Prepare demolition site.
- 3.1 Determine requirements of site demolition plan and discuss these with team members.
 - 3.2 Conduct site inspection of property or dilapidation survey to determine condition of work site and surrounds before work begins and amend and see approval of safe work method statement as required.
 - 3.3 Obtain confirmation from supervisor and regulatory authorities that specified services, above and below ground, have been disconnected and identifies and protects any remaining live services.
 - 3.4 Identify hazardous material for separate handling.
 - 3.5 Position mechanical equipment and plant in operating locations and arrange appropriate exclusion zone and traffic control.
- 4 Operate mobile plant for demolition process.
- 4.1 Identify and apply mobile plant general operating techniques to achieve safe, effective and efficient output while achieving specified tolerances.
 - 4.2 Identify site hazards associated with mobile plant demolition operations and follow safe operating techniques to minimise risks.
 - 4.3 Monitor and control placement of mobile plant and allowable weight of demolition debris loads on suspended floors throughout the demolition process.

- 4.4 Move mobile plant safely between work locations and observe codes and traffic management requirements.
 - 4.5 Implement control measures to manage hazards arising from demolition process according to the demolition plan, safe work methods and regulatory requirements.
 - 4.6 Assess demolition tasks immediately prior to starting and review safe work method statement (SWMS) to incorporate management of previously undiscovered hazards.
 - 4.7 Operate mobile plant on suspended floors to demolish building elements or remove demolition debris using suitable attachments according to approved demolition plan, structural engineering advice, and current safe work method.
 - 4.8 Maintain communication with team members during the demolition process.
 - 4.9 Monitor worksite conditions and progress in consultation with team members and stop work or adjust techniques as required.
- 5 Carry out machine operator inspection and maintenance tasks.
 - 5.1 Park and shut down mobile plant safely and remove and store attachments.
 - 5.2 Inspect mobile plant for faults and remove and replace defective parts.
 - 5.3 Conduct regular programmed operator maintenance tasks and complete log sheets.
- 6 Clean up work area.
 - 6.1 Clear work area and sort materials and waste and position for removal, as required, according to site demolition project environmental management plan.
 - 6.2 Clean, check, maintain and store maintenance tools and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3024A Operate mobile plant on suspended floors on demolition sites.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3024 Operate mobile plant on suspended floors on demolition sites

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Criteria numbering rectified in Elements 3 and 6.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3024A Operate mobile plant on suspended floors on demolition sites. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must operate mobile plant on a suspended floor to complete the following demolition tasks:

- demolish 10 square metres of roof and wall structure
- break up 10 square metres of concrete floor using a hydraulic hammer attachment
- separate, sort, and load for transport a minimum of 10 cubic metres of recyclable and waste material.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- basic principles of structural engineering relating to:
 - placement of loads on suspended floors during demolition of the same floor
 - propping requirements
 - stability of buildings and structures throughout the demolition process
- risks associated with:
 - pre-tensioning
 - post-tensioning
 - pre-cast slabs

- general construction terminology
- hazards associated with the operation of mobile plant on suspended floors on residential, commercial and industrial demolition sites
- hazards associated with inappropriate demolition methodology, including structural collapse or the premature failure of floors or other structural elements
- methods for materials storage and disposal, including environmentally friendly waste management
- method of operation and maintenance requirements of mobile plant and attachments
- types, characteristics, uses and limitations of mobile plant in the demolition industry
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for operating mobile plant on suspended floors on demolition sites
- appropriate documents, materials, tools, equipment and personal protective equipment currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3025 Operate remote-controlled plant on demolition sites

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified naming of Element 5.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCE3025A Operate remote-controlled plant on demolition sites. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to operate remote-controlled plant to conduct high risk demolition operations, such as overhead cutting, sawing and jack hammering, and to operate remote-controlled plant work in restricted spaces, such as tunnels. Remote-controlled plant may be operated at ground level, below ground or on suspended floors.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare for work.
 - 1.1 Interpret and apply compliance requirements for remote-controlled plant demolition operations.
 - 1.2 Complete tasks according to manufacturer specifications and regulatory, legislative and workplace policies and requirements.
 - 1.3 Obtain work instructions from relevant information, confirm with team members and other relevant personnel, and apply to planning and preparation.
 - 1.4 Follow instructions and advice from structural engineer regarding load bearing capacities and demolition techniques on suspended floors.
 - 1.5 Identify and apply work health and safety (WHS) requirements to task planning according to safety plans.
 - 1.6 Identify environmental requirements for the project according to environmental plans.
 - 1.7 Identify, select and fit personal protective equipment (PPE).
 - 1.8 Check maintenance tools and equipment for serviceability and rectify and report faults.
 - 1.9 Conduct remote-controlled plant pre-start, start-up, park and shutdown operational checks.
 - 1.10 Check remote-controlled plant controls and functions, including brakes and manoeuvrability, for serviceability, and rectify and report faults.
 - 2 Select, check and fit attachments.
 - 2.1 Select remote-controlled plant attachments to carry out tasks consistent with job requirements.
 - 2.2 Check attachments, arms and connections for excessive wear, and replace and report as required.
 - 2.3 Fit attachments securely according to safe work method and fit safety pins or clips.
 - 2.4 Check hydraulic components and rectify or replace faulty components and report actions.

- 2.5 Test operation of hydraulic system before applying load.
 - 2.6 Test attachment operation by raising and lowering attachment and lock attachment in raised position for travel.
 - 2.7 Remove, clean and store attachments.
- 3 Prepare demolition site.
 - 3.1 Determine requirements of site demolition plan and discuss these with team members.
 - 3.2 Conduct site inspection of property or dilapidation survey to determine condition of worksite and surrounds before work begins and amend and seek approval of safe work method statement (SWMS) as required.
 - 3.3 Obtain confirmation from supervisor and regulatory authorities that all existing services have been disconnected.
 - 3.4 Identify hazardous material for separate handling.
 - 3.5 Position mechanical equipment and plant in operating locations and arrange appropriate exclusion zone and traffic control.
- 4 Operate remote-controlled plant loader for demolition process.
 - 4.1 Identify and apply remote-controlled plant operating techniques to achieve optimum output while achieving specified tolerances.
 - 4.2 Identify site hazards associated with remote-controlled plant demolition operations, including position of operator and personnel in relation to plant, equipment and environment and follow safe operating techniques to minimise risks.
 - 4.3 Move remote-controlled plant safely between work locations and observe relevant codes and traffic management requirements.
 - 4.4 Implement control measures to manage hazards arising from demolition process according to the demolition plan, safe work methods and regulatory requirements.
 - 4.5 Assess demolition tasks immediately prior to starting and review SWMS to incorporate management of previously

- unpredicted hazards.
- 4.6 Operate remote-controlled plant at a safe distance to demolish building elements using suitable attachments according to approved demolition plan and current safe work method.
 - 4.7 Maintain communication with team members during the demolition process.
 - 4.8 Monitor worksite conditions and progress in consultation with team members and stop work or adjust techniques as required.
- 5 Carry out machine operator inspection and maintenance tasks.
 - 5.1 Carry out machine operator inspection and maintenance tasks.
 - 5.2 Carry out machine operator inspection and maintenance tasks.
 - 5.3 Carry out machine operator inspection and maintenance tasks.
- 6 Clean up work area.
 - 6.1 Clear work area and sort materials and waste and position for removal, as required, according to site demolition project environmental management plan.
 - 6.2 Clean, check, maintain and store maintenance tools and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3025A Operate remote-controlled plant on demolition sites.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE3025 Operate remote-controlled plant on demolition sites

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified naming of Element 5.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCE3025A Operate remote-controlled plant on demolition sites. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must operate remote-controlled plant to complete the following demolition tasks:

- demolish 10 square metres of in-situ building material on each of three different types of buildings or structures
- break up 10 square metres of concrete floor or structure using a hydraulic hammer attachment.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- basic principles of structural engineering regarding loads on suspended floors
- general construction terminology
- hazards associated with the operation of remote-controlled plant on residential, commercial and industrial demolition sites:
 - plant
 - personnel
 - operator
- methods for materials storage and disposal, including environmentally friendly waste management

- method of operation and maintenance requirements of remote-controlled plant and attachments
- types, characteristics, uses and limitations of remote-controlled plant in the demolition industry
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for operating remote-controlled plant on demolition sites
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3026 Operate excavators at ground level to demolish building elements

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor typographical errors rectified.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE3026A Operate excavators at ground level to demolish building elements. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to operate an excavator at ground level in the demolition industry. The unit covers planning and preparing; conducting machine pre-operational checks; preparing a site for the demolition process; following demolition procedures for different building elements; selecting, removing and fitting attachments; removing demolition materials and waste; relocating excavators; and carrying out machine operator maintenance.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|------------------------------------|-----|--|
| 1 | Plan and prepare for work. | 1.1 | Interpret and apply compliance requirements to excavator operation. |
| | | 1.2 | Complete tasks according to manufacturer specifications and regulatory, legislative and workplace policies and requirements. |
| | | 1.3 | Obtain work instructions from required information, confirm with team members and other relevant personnel, and apply to planning and preparation. |
| | | 1.4 | Identify and apply work health and safety (WHS) requirements to task planning. |
| | | 1.5 | Identify environmental requirements for the project according to environmental plans. |
| | | 1.6 | Identify, select and fit personal protective equipment (PPE). |
| | | 1.7 | Check tools and equipment, complete pre-start checks and operator maintenance tasks for serviceability and rectify and report faults. |
| | | 1.8 | Conduct excavator pre-start, start-up, park and shutdown operational checks. |
| | | 1.9 | Check excavator controls and for serviceability and rectify and report faults. |
| 2 | Select, check and fit attachments. | 2.1 | Select excavator attachments to carry out tasks consistent with job requirements. |
| | | 2.2 | Check attachments and connections for excessive wear and replace and report actions as required. |
| | | 2.3 | Fit attachments securely according to safe work method, and use an applicable safety retaining device. |
| | | 2.4 | Check hydraulic components and rectify or replace components and report actions as necessary. |
| | | 2.5 | Test operation of hydraulic system before applying load. |

- 2.6 Test attachment operation by raising and lowering attachment and lock attachment securely in position for travel.
 - 2.7 Remove, maintain and store attachments.
- 3 Prepare demolition site.
 - 3.1 Determine requirements of site demolition plan and discuss these with team members.
 - 3.2 Conduct site inspection of property or dilapidation survey to determine condition of worksite and surrounds before work begins and amend and seek approval of safe work method statement (SWMS) as required.
 - 3.3 Confirm with supervisor or regulatory authorities that specified services, above and below ground, have been disconnected and identify and protect any remaining live services.
 - 3.4 Identify hazardous material for separate handling.
 - 3.5 Position mechanical equipment and plant in operating locations and arrange appropriate exclusion zone and traffic control and overhead service line protection.
- 4 Operate excavator for demolition process.
 - 4.1 Identify and apply excavator general operating techniques to achieve safe, effective and efficient output according to manufacturer's design specifications while achieving specified tolerances.
 - 4.2 Identify site hazards associated with excavator demolition operations and follow safe operating techniques to minimise risks.
 - 4.3 Move excavator safely between work locations.
 - 4.4 Implement control measures to manage hazards arising from demolition process according to the demolition plan, safe work methods and regulatory requirements.
 - 4.5 Assess demolition tasks immediately prior to starting, and review SWMS to incorporate management of undiscovered hazards.
 - 4.6 Operates excavator at ground level to demolish building elements using suitable attachments according to

- approved demolition plan and current safe work method.
- 4.7 Maintain communication with team members during the demolition process.
- 4.8 Monitor worksite conditions and progress in consultation with team members and stop work or adjust techniques as required.
- 5 Carry out machine operator inspection and maintenance tasks.
- 5.1 Park and shut down excavator safely and remove and store attachments.
- 5.2 Inspect excavator for faults and remove and replace defective parts.
- 5.3 Conduct regular programmed operator maintenance tasks and complete log sheets.
- 6 Clean up work area.
- 6.1 Clear work area and sort materials and waste and position for removal, as required, according to site demolition project environmental management plan.
- 6.2 Clean, check, maintain and store maintenance tools and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE3026A Operate excavators at ground level to demolish building elements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCDE3026 Operate excavators at ground level to demolish building elements

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor typographical errors rectified.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCDE3026A Operate excavators at ground level to demolish building elements. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must operate an excavator from ground level to complete the following demolition tasks:

- demolish 30 square metres of structure
- separate, sort, lift, transfer and load for transport a minimum of 10 tonnes of recyclable and waste material.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- general construction terminology
- hazards associated with the operation of excavators from ground level on residential, commercial and industrial demolition sites
- methods for materials storage and disposal, including environmentally friendly waste management
- method of operation and maintenance requirements of excavator and attachments
- types, characteristics, uses and limitations of excavators in the demolition industry
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for operate excavators at ground level to demolish building elements
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE3027 Read and interpret demolition site plans and drawings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit

Application

This unit specifies the skills and knowledge required to read and interpret demolition site plans and drawings relevant to demolition operations.

It includes identifying and interpreting types of demolition site plans and their functions, recognising commonly used symbols and abbreviations, identifying key features and specifications on a demolition site plan and drawings and comprehending job specifications.

It applies to workers in the demolition industry. It involves working under supervision in a team environment.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|--|-----|--|
| 1 Identify and confirm demolition site work plan and currency. | 1.1 | Identify the key features and functions of each of the main types of site plans used in the demolition industry and their purpose. |
| | 1.2 | Locate and explain the purpose of the legend on site work plans and drawings used in the demolition industry. |
| | 1.3 | Explain and confirm the meaning of symbols and abbreviations used on demolition work plans and drawings with relevant persons. |
| | 1.4 | Check amendments to demolition work plans to ensure currency of information, and report to relevant persons as required. |
| 2 Locate key features on a demolition site plan. | 2.1 | Orientate the demolition site plan with the site. |
| | 2.2 | Locate key features of the demolition site from the site plan. |
| 3 Identify demolition project requirements from site plan. | 3.1 | Identify demolition project dimensions and nominated locations from drawings. |
| | 3.2 | Identify demolition options from site plans and drawings. |
| | 3.3 | Identify environmental requirements, controls and locations from environmental plan and demolition site plan. |
| | 3.4 | Identify standards of work and tolerances from demolition site plan and specifications. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCDE3027 Read and interpret demolition site plans and drawings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit

Performance Evidence

A candidate who demonstrates competency in this unit must read and interpret two different residential demolition site plans and two different commercial demolition site plans.

In doing this, the candidate must meet the requirements of the performance criteria.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- features and functions of different types of demolition site plans:
 - drawings
 - cross-sectional plans
 - demolition work method statement
 - demolition management plan
 - traffic management plan
 - dilapidation report
 - hazardous materials audit
 - engineering reports and assessments
 - demolition site instructions
 - demolition project specifications
 - structural detail and specification providing illustrations and dimensions
 - legends, symbols and abbreviations used on demolition work plans
- processes for:
 - checking amendments to plans
 - orientating demolition site plans against sites
 - locating site demolition locations from site plans

- key features of demolition site plans:
 - characteristics
 - compatibility
 - construction
 - location
 - pattern dimension
 - quantities
 - sizes
- environmental requirements:
 - clean-up management
 - waste management
 - hazardous materials
- key features of specifications:
 - detail relating to materials and quality of work, quality assurance, nominated subcontractors, and provision of demolition site access/facilities
- details relating to performance:
 - characteristics
 - material types
 - standards of work
 - tolerances
 - treatments and finishes.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- plans and specifications for a demolition project and access to a demolition site
- reference material and equipment to read and interpret plans and specifications for demolition projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE4001 Plan and prepare for activities on demolition sites

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE4001A Plan and prepare for activities on demolition sites. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to assess the size and scope of large demolition projects, including structures or installations above 15 metres, on different types of sites and identify the resources required to complete the project on time and within budget. It includes communication of project requirements to team members in preparation for demolition work to commence.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---|-----|---|
| 1 | Assess demolition site and scope of work. | 1.1 | Interpret demolition plan and inspect site to evaluate size and complexity of demolition tasks. |
|---|---|-----|---|

- 1.2 Assess concurrent work of other construction teams and establish or confirm communication channels.
 - 1.3 Assess site access and egress and traffic management plan and negotiate additional provisions or changes as required.
 - 1.4 Assess provisions for site storage and amenities and arrange additional provisions or changes as required.
 - 1.5 Confirm and apply general site work health and safety (WHS) and environmental requirements to planning.
 - 1.6 Confirm and apply regulatory compliance requirements to planning.
 - 1.7 Arrange HAZMAT audits prior to demolition work start date and apply findings to planning.
- 2 Schedule demolition activities.
- 2.1 Analyse demolition plan and prioritise individual demolition tasks according to WHS, site and resource requirements.
 - 2.2 Plan and sequence concurrent tasks to maximise efficient use of resources.
 - 2.3 Estimate resource hours required for individual demolition tasks with allowances for contingencies.
 - 2.4 Calculate timelines for different project stages, compare these to demolition plan, and adjust as required.
 - 2.5 Prepare project schedule, organise review by required personnel, make amendments as required and process schedule according to workplace requirements.
- 3 Prepare safe work method statements (SWMS) for individual demolition activities.
- 3.1 Inspect site and identify hazards and risks associated with demolition tasks, discuss findings with WHS and site personnel, and evaluate impact on sequencing of tasks.
 - 3.2 Analyse risk management strategies according to the hierarchy of control in consultation with WHS and site personnel.

- 3.3 Prepare SWMS for demolition tasks.
- 3.4 Review SWMS immediately before work starts to re-assess worksite conditions.
- 4 Arrange resources for demolition activities.
 - 4.1 Confirm resource requirements for demolition tasks and calculate requirements for concurrent tasks according to project schedule.
 - 4.2 Arrange delivery of required plant, tools and equipment according to project schedule.
 - 4.3 Determine specialised skill requirements for different project stages and assess skills of available team members to identify skill shortages.
 - 4.4 Conduct and complete recruitment of additional team members within required timeframe.
 - 4.5 Allocate team members to tasks and check and confirm human resource requirements for all project stages as complete.
- 5 Conduct site induction and team briefing for demolition project.
 - 5.1 Arrange and conduct site tour and site induction.
 - 5.2 Explain and discuss details of task allocations and scheduling, and confirm team understanding of work requirements.
 - 5.3 Explain concurrent work of other construction teams, and interactions and communication channels, and confirm understanding of team members.
 - 5.4 Explain provisions for dealing with risks, hazards and contingencies, and confirm understanding of team members.
 - 5.5 Encourage team members to ask questions for clarification at all stages of the work and to provide suggestions for improvements in processes.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE4001A Plan and prepare for activities on demolition sites.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE4001 Plan and prepare for activities on demolition sites

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE4001A Plan and prepare for activities on demolition sites. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must plan and prepare for activities on two different large demolition projects, one of which must involve a structure above 15 metres in height.

In doing this, the candidate must:

- assess demolition site and scope of work
- schedule demolition activities
- prepare safe work method statements (SWMS) for demolition activities
- arrange resources for demolition activities
- conduct site induction and team briefing for demolition project.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- contract management strategies
- customer service strategies
- demolition procedures, techniques and safety requirements
- demolition site inspection procedures
- hazards and risks existing or arising on demolition sites and relevant risk management strategies
- legislation, regulations, codes and standards relating to different stages of the demolition process
- plant, tools and equipment required for demolition tasks:

- permits and licences required
- safe operating procedures
- project management strategies
- quality management strategies
- team leadership strategies.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for planning and preparing for activities on demolition sites
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE4002 Plan demolition work to minimise risk to health, safety and environment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE4002A Plan and supervise demolition work to minimise environmental and public health and safety impact. Minor title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to plan large demolition projects, including but not limited to structures or installations above 15 metres, to minimise environmental, public health and safety impact. It includes interpreting and meeting relevant compliance requirements and developing and implementing proactive measures to exceed them where possible.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Assess potential impacts of demolition

1.1 Determine environmental and public health and safety compliance requirements for the demolition site and

- tasks. geographic locality.
- 1.2 Determine potential impacts on public health and safety.
- 2 Implement measures to minimise impacts of demolition work on the environment.
- 2.1 Investigate, select and incorporate strategies into procedures to minimise impacts on air quality.
- 2.2 Investigate, select and incorporate strategies into procedures to minimise water wastage and impacts on stormwater.
- 2.3 Investigate, select and incorporate strategies into procedures to minimise energy wastage and employ renewable energy technologies.
- 2.4 Investigate, select and incorporate strategies into procedures to minimise material wastage and to ensure safe disposal of hazardous and waste materials.
- 3 Identify measures to minimise impacts of demolition work on the public.
- 3.1 Interpret and amend strategies regarding site containment, exclusion and signage strategies to minimise impacts on the public and to maximise employee awareness.
- 3.2 Interpret and amend strategies regarding pedestrian and traffic management plan for site and site perimeter to minimise risks to the public.
- 3.3 Interpret and amend strategies regarding fall prevention for both personnel and materials to minimise risks to site personnel and the public.
- 3.4 Interpret and amend strategies regarding noise, air pollution and vibration management to minimise impact on the public.
- 4 Develop demolition work plans.
- 4.1 Interpret documentation to develop demolition work plans.
- 4.2 Confirm personnel and staff availability are sufficient for work plans.

- | | | |
|--|-----|--|
| 5 Brief team and supervise implementation of impact minimisation strategies. | 5.1 | Consult with demolition teams to confirm strategies for minimising impact of demolition work on the environment and on public health and safety. |
| | 5.2 | Distribute amended safe work method statements (SWMS) and invite and respond to questions, as required. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE4002A Plan and supervise demolition work to minimise environmental and public health and safety impact.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE4002 Plan demolition work to minimise risk to health, safety and environment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE4002A Plan and supervise demolition work to minimise environmental and public health and safety impact. Minor title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must plan and supervise demolition work to minimise environmental and public health and safety impact on two demolition projects, one of which must involve a structure above 15 metres in height. The candidate must:

- assess the potential impacts of the demolition tasks
- identify measures to minimise the impacts of the demolition work on the environment
- identify measures to minimise the impacts of the demolition work on the public
- review strategies and demolition work plan
- brief and consult with the demolition team.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- demolition procedures, techniques and safety requirements
- demolition site inspection procedures
- environmental and public health and safety hazards and risks existing or arising on demolition sites, and relevant risk management strategies
- legislation, regulations, codes and standards relating to environmental and public health and safety on demolition sites
- plant, tools and equipment required for demolition tasks:
 - permits and licences required
 - safe operating procedures
- project management strategies

- quality management strategies
- strategies to minimise environmental and public health and safety risks on and around demolition sites
- team leadership strategies.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications for planning and documenting demolition work
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE4003 Supervise operational activities on demolition sites

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE4003A Supervise individual activities on demolition sites. Minor title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to monitor and direct demolition activities on large demolition projects, including structures or installations including but not limited to those above 15 metres on different types of sites to ensure that projects are completed within required timeframe and to specifications. It includes overseeing preparation for demolition work; reviewing safe work methods prior to task commencement; controlling, monitoring and directing team members throughout task completion; and overseeing site clean-up activities.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Supervise preparation 1.1 Process permit applications for different tasks and

- for demolition work. confirm as compliant prior to starting work.
- 1.2 Communicate to team members work instructions for individual demolition tasks and invite and address questions.
 - 1.3 Confirm team member understanding of work health and safety (WHS) and environmental requirements.
 - 1.4 Confirm team members' selection of plant, tools and equipment is consistent with job requirements.
 - 1.5 Process reported plant, tool and equipment faults according to workplace and WHS requirements and source replacements as required.
 - 1.6 Monitor and direct team members' manual handling and placement of plant, tools and equipment at the site to ensure safety and efficiency.
- 2 Monitor and manage tasks and procedures.
- 2.1 Inspect worksites for individual demolition tasks, and review risks and hazards in conjunction with team members.
 - 2.2 Review safe work method statements (SWMS) for individual tasks with team members, observe site conditions and make adjustments according to issues raised, in consultation with WHS personnel as required.
 - 2.3 Monitor weather conditions and contingencies and direct resources as required to ensure safety, quality and timeliness of demolition task completion.
 - 2.4 Monitor and direct progress of work and procedures used by team members to minimise risks on site and impacts on public health and safety and the environment.
 - 2.5 Stop work when previously undiscovered hazards arise, clear work site, and re-assess site and safe work method in consultation with relevant personnel.
 - 2.6 Check completed work for compliance with work plans and specification, identify discrepancies, and direct resources to make adjustments as required.
- 3 Supervise site
- 3.1 Monitor and direct removal and storage or disposal of

- clean-up.
- plant, tools, equipment materials and waste to ensure compliance with workplace, safety and environmental requirements.
- 3.2 Debrief team members and identify and action opportunities for learning as required.
- 3.3 Complete and process project documentation according to workplace and project requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE4003A Supervise individual activities on demolition sites.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE4003 Supervise operational activities on demolition sites

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE4003A Supervise individual activities on demolition sites. Minor title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must supervise operational activities for two demolition projects on different sites, one of which must involve a structure or installation above 15 metres in height.

In doing this, the candidate must meet the requirements of the unit's elements and associated performance criteria by:

- supervising preparation for demolition tasks
- monitoring and managing completion of demolition tasks
- supervising clean-up and finalisation of demolition tasks.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- contract management strategies
- customer service strategies
- demolition procedures, techniques and safety requirements
- demolition site inspection procedures
- hazards and risks existing or arising on demolition sites and relevant risk management strategies
- legislation, regulations, codes and standards relating to demolition
- plant, tools and equipment required for demolition tasks, including:
 - permits and licences required
 - safe operating procedures
- project management strategies
- quality management strategies

- team leadership strategies.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE4004 Finalise demolition activities and supervise property handover

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE4004A Finalise demolition activities and supervise property handover. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to ensure that large demolition projects, including but not limited to structures or installations above 15 metres in height and on different types of sites, are completed within the required timeframe and to specifications, with agreed alterations to specified work clearly recorded. It includes ensuring that the property is handed over to the owner or their nominated representative within projected timeframes and that relevant documentation is completed and processed.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan handover of property.
 - 1.1 Interpret and confirm information relating to demolition contract, including timelines for completion and site handover specifications.
 - 1.2 Complete tasks according to regulatory, legislative and workplace policies and requirements.
 - 1.3 Confirm and schedule handover process with stakeholders and negotiate and record required amendments to timeframes or handover specifications.
 - 1.4 Confirm and schedule demolition finalisation tasks and assess and arrange resources.
 - 1.5 Determine and apply work health and safety (WHS) requirements to task planning.
 - 1.6 Identify environmental requirements for the project according to environmental plans.
 - 1.7 Brief demolition team, allocate demolition finalisation tasks and confirm these are understood by team members.

- 2 Monitor quality and timeliness of job completion.
 - 2.1 Conduct audit of property to determine condition of worksite and surrounds before initiating demolition finalisation tasks and adjust safe work method statements (SWMS) in consultation with relevant personnel, as required.
 - 2.2 Start scheduled tasks within required timeframes and monitor progress to completion to ensure deadlines are met.
 - 2.3 Monitor hazard control and regulatory compliance throughout the finalisation process and direct team members to use specific procedures or techniques, as necessary.
 - 2.4 Assess completed tasks against specifications and note, resolve and record discrepancies in required documentation.
 - 2.5 Inspect and check property against finalisation schedule and quality requirements and identify, resolve and record discrepancies in required documentation.

- | | | | |
|---|---|-----|--|
| 3 | Conduct handover site inspection with stakeholders. | 3.1 | Confirm handover site inspection appointment with property owner or authorised representatives and other relevant personnel, as required. |
| | | 3.2 | Confirm procedures and required documentation for handover site inspection with stakeholders. |
| | | 3.3 | Interpret records relating to completed demolition work and record and confirm agreed variations to initial specifications in completion documentation. |
| | | 3.4 | Conduct site safety inspection and arrange or deliver site safety induction to stakeholders prior to handover site inspection. |
| | | 3.5 | Inspect sections of site according to handover site inspection schedule and sign off as complete or discuss discrepancies and negotiate and record solutions. |
| 4 | Finalise work and complete handover documentation. | 4.1 | Implement solutions to discrepancies discovered on handover site inspection according to negotiated schedule and monitor and check completion is to required standard. |
| | | 4.2 | Supervise site clearance and check to ensure all plant, tools, equipment, materials and waste are removed and that ground is prepared according to agreed standard. |
| | | 4.3 | Prepare and process final documentation. |
| | | 4.4 | Secure site according to project requirements. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCE4004A Finalise demolition activities and supervise property handover.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE4004 Finalise demolition activities and supervise property handover

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCE4004A Finalise demolition activities and supervise property handover. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must finalise demolition activities and supervise property handover for two large demolition projects, one of which must involve a structure or installation above 15 metres in height.

In doing this, the candidate must meet the requirements of the unit's elements and associated performance criteria by:

- planning finalisation of demolition activities and handover of property
- monitoring quality and timeliness of demolition project completion
- conducting handover site inspection with stakeholders
- finalising project and completing handover documentation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- contract management strategies
- customer service strategies
- demolition procedures, techniques and safety requirements
- demolition site audit procedures
- hazards and risks existing or arising on demolition sites and relevant risk management strategies
- legislation, regulations, codes and standards relating to relating to the finalisation of demolition tasks and handing over the property
- plant, tools and equipment required for demolition tasks:
 - permits and licences required
 - safe operating procedures

- project management strategies
- quality management strategies
- team leadership strategies.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s and specifications
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE4005 Apply structural principles to the planning of the demolition of a structure

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to apply structural principles when planning demolition, using conventional methods, of structures.

This unit of competency supports the needs of site managers, forepersons and other managers in the building and construction or demolition industry responsible for effecting a demolition plan.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authority.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Analyse the structural integrity of demolition | 1.1 Analyse integrity of structure from project plans and specifications, building standards and codes. |
|--|---|

- project.
- 1.2 Conduct pre-commencement site inspection to confirm analysis.
 - 1.3 Assess project for compliance with workplace safety and environmental requirements.
 - 1.4 Confirm analysis with relevant industry professionals.
- 2 Apply structural principles to the planning of demolition project.
- 2.1 Identify main structural principles that apply to the intended demolition.
 - 2.2 In conjunction with related industry professionals, confirm the structural performance characteristics of slabs, beams, columns and retaining walls and apply these to the planning of the demolition project.
 - 2.3 Confirm properties and behaviours of structural components and then possible reactions to demolition, using standard industry formulas and performance comparisons.
- 3 Evaluate worksite prior to demolition.
- 3.1 Implement processes to analyse stability of soils and capacity of the site to support the demolition loads.
 - 3.2 Establish processes for demolishing wall systems and wall cladding systems in compliance with relevant Australian Standards and codes.
 - 3.3 Evaluate structural integrity of the roof and roof cladding system in preparation for demolition.
 - 3.4 Complete relevant documentation in accordance with workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE4005 Apply structural principles to the planning of the demolition of a structure

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by applying structural principles to the demolition planning of two different structures on two different demolition projects.

Performance must include:

- analysing the structural integrity of structures
- applying structural principles to the planning of demolition projects
- evaluating worksites prior to demolition.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- applications of structural principles in buildings
- design principles and behaviour of structural members undergoing stress, strain, compression, bending or combined actions
- interpretation and analysis of work drawings and specifications
- nature of materials and effect of performance during demolition of structures
- structural principles
- materials
- industry professionals
- documentation
- structural floor systems
- structural wall systems
- wall cladding systems
- relevant services
- structural roof systems
- roof cladding systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- documentation, including design brief drawings, specifications, codes, design concepts, construction schedules and other necessary supporting documents
- research resources, access to relevant legislation, regulations and codes of practice
- relevant computer software and hardware.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE4006 Demolish stressed panel structure and pre-cast panel structure

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to plan and carry out the demolition of stressed and pre-cast structures in accordance with specifications.

It includes planning and preparation for the work, inspecting bars, components and defining the work area.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

CPCWHS20 Apply WHS requirements, policies and procedures in the construction
01 industry

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare for 1.1 Obtain, confirm and apply work instructions, including

- work.
- plans, specifications, quality requirements and operational details from relevant information to the scope of work performed.
- 1.2 Plan all work tasks according to manufacturer specifications and regulatory, legislative and workplace policies and requirements.
 - 1.3 Obtain and interpret building, construction and structural drawings of original buildings to be demolished, where possible.
 - 1.4 Engage structural engineer to complete an assessment of the structure, including suspended slabs or beams for the preparation of a demolition work plan.
 - 1.5 Follow safety requirements in accordance with safety plans and policies.
 - 1.6 Complete safe work method statement (SWMS) where structural elements are to be demolished.
 - 1.7 Select tools and equipment to carry out tasks which are consistent with engineer advice and the requirements of the job, check for serviceability and rectify and report any faults prior to commencement.
 - 1.8 Calculate materials quantity requirements in accordance with engineer advice, plans, specifications and quality requirements.
 - 1.9 Identify, prepare and safely handle materials and position ready for use.
 - 1.10 Identify environmental requirements for the project.
 - 1.11 Identify and explain the key elements, hazards and differences between pre-and post-tensioning to relevant personnel.
- 2 Define the work area.
- 2.1 Define safe working area.
 - 2.2 Erect barricades and signage where required to isolate safe work areas.
- 3 Examine stressed
- 3.1 Drill holes or cut and hammer out small sections of slabs

- panel elements.
- or beams throughout the structure for inspection by engineer and project manager for existing tensioning members within the structure.
- 3.2 Seek advice from engineer regarding the demolition work plan sequence and procedure for demolition of the structure.
- 3.3 Identify loads carried, anchorage points and number of tendons using relevant plans, photographs and workplace documentation, under the direct supervision of a structural engineer.
- 3.4 Conduct visual inspection to confirm loads and deviations from original plans and specifications, under the direct supervision of a structural engineer.
- 4 Examine pre-cast elements.
- 4.1 Review structural engineer's assessment of the structure, including connections to slabs or beams, for the preparation of a demolition work plan.
- 4.2 Confirm how pre-cast elements are connected to the main building structure and the methods that were used to install them.
- 5 Demolish structure.
- 5.1 Conduct visual inspection to confirm loads and connections from original plans and specifications, under the direct supervision of a structural engineer and communicate with demolition team.
- 5.2 Erect public protection outside buildings above one story in height, as required.
- 5.3 Cut or break out sections of concrete panel to substantiate how the connections to the structure were made.
- 5.4 Prepare the work area for removal of panels.
- 5.5 Install temporary propping to panels adjacent to those planned for removal, as required by engineer instructions.
- 5.6 Use required tools and equipment to cut through the joints between panels and separate panels.

- 5.7 Break out concrete at the top and bottom of the panel or cut connections in preparation for removal.
 - 5.8 Lift and remove panel using a crane or machine with the appropriate connections or mechanically demolish using a hydraulic attachment.
 - 5.9 Pull panel into site and remove connections to structure.
 - 5.10 Repeat process to remove remaining panels.
- 6 Clean up work area.
- 6.1 Clear work area and dispose, reuse or recycle materials.
 - 6.2 Clean, check, maintain and store plant, tools and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE4006 Demolish stressed panel structure and pre-cast panel structure

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency in this unit the candidate must demolish one stressed panel structure and one pre-cast panel structure.

After identifying and controlling hazards, the candidate, working as a part of a team, must demolish one stressed panel structure of not less than four metres high, not less than three metres wide and not less than two tonnes in weight and one pre-cast panel structure of not less than four metres high, not less than three metres wide and not less than two tonnes in weight.

In doing this, the candidate must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- basic theory related to cable stressing as a reinforcement technology
- calibration procedures related to stressing techniques and equipment
- construction and steelfixing tensioning terminology
- factors affecting concrete bonding, curing and strength
- grouting equipment and procedures
- job safety analysis (JSA)
- safe work method statements (SWMS)
- safety data sheets (SDS)
- materials storage and environmentally friendly waste management
- plans, drawings and specifications
- processes for the calculation of material requirements
- quality requirements
- requirements and processes for recording stressing operations
- plans containing position of cables, height of chairs, cable specifications, number of strands per cable and the stressing loads

- types of structural elements, including slabs, beams, columns and ground anchors
- types of structures, including buildings, bridges, towers, tanks, silos, stayed structures, offshore platforms, and underground and submerged structures
- safe de-tensioning procedures and techniques
- workplace and equipment safety requirements
- public protection:
 - demolition rated scaffolding.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- demolition worksite/s specifications for demolishing stressed panel and pre-cast panel structures
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE4007 Manage waste streams

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to implement waste recovery practices in the demolition industry.

It includes planning and preparing for work, identifying the types of waste to be recovered, locating and engaging cyclers or reprocessors and completing clean-up activities.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to demolition work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare for work.

1.1 Obtain, confirm and apply work instructions, including plans, specifications, quality requirements and operational details from required information.

1.2 Complete tasks according to manufacturer specifications and regulatory, legislative and workplace policies and

- requirements.
- 1.3 Follow safety requirements in accordance with safety plans and policies.
 - 1.4 Identify and implement signage and barricades.
 - 1.5 Select tools and equipment to carry out tasks that are consistent with the requirements of the job, check for serviceability and rectify and report any faults prior to commencement.
 - 1.6 Identify, prepare and safely handle materials appropriate to the work application and position ready for use.
 - 1.7 Identify environmental requirements for the project.
 - 1.8 Identify the different possible waste streams for the project.
 - 1.9 Identify appropriate disposal locations for each identified waste stream.
- 2 Select and use appropriate demolition practices.
- 2.1 Determine and use demolition practices to increase the recovery of materials for recycling and reuse.
 - 2.2 Adjust timelines to take into account additional time required for salvage operations.
- 3 Identify and sort waste to be recovered.
- 3.1 Determine waste products to be re-used, recycled or recovered.
 - 3.2 Confirm worksite procedures for segregating and locating recyclable and waste demolition materials with relevant personnel.
 - 3.3 Identify and handle hazardous, dangerous and non-conforming waste.
 - 3.4 Segregate waste into categories according to waste characteristics and reprocessor requirements.
 - 3.5 Set aside waste in a safe, secure and accessible location to await collection or processing.

- | | |
|---|---|
| 4 Identify and engage waste recyclers and reprocessors. | 4.1 Determine reprocessing site or contractor. |
| | 4.2 Engage reprocessor, as required. |
| | 4.3 Coordinate collection of materials to be recycled or reprocessed. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCDE4007 Manage waste streams

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency in this unit, a candidate must identify the different waste streams for a demolition project and supervise the segregation and disposal of the different waste streams. The candidate must provide evidence of:

- the initial audit/identification process
- the waste management tracking system, including the identified end use location of each waste stream.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- Australian and New Zealand Government Framework for Sustainable Procurement
- demolition methods:
 - impacts on recovery methods
 - impacts on recovery costs
 - types
- workplace hazards:
 - asbestos
 - chemicals
 - fuel
 - falling objects
 - flying debris
 - structural composition hazards
 - services hazards
 - fire or explosion risk
 - traffic

- materials for recovery:
 - clay
 - ferrous metals
 - glass
 - masonry:
 - bricks
 - concrete
 - natural aggregate
 - non-ferrous metals
 - paper and cardboard
 - plasterboard
 - plastic
 - steel
 - textiles
 - timber
- salvage:
 - process
 - effect on project timelines
- requirements under relevant state or territory legislation
- types of loads:
 - mixed loads
 - source separated.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the candidate demonstrating competency has access to:

- worksite/s specifications
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- requirements of workplace policies, procedures and demolition plans.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE4008 Supervise asbestos removal

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4051A Supervise asbestos removal.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to supervise the removal process for friable and non-friable asbestos containing material (ACM). The unit includes planning for and supervising the removal process, including preparing the work area and the worksite, using safe and compliant removal practices, maintaining safety procedures, and supervising the decontamination and removal processes.

Ensuring compliance with the asbestos removal control plan (ARCP) is central to the effective performance of the role. This includes ensuring and documenting that required air monitoring and other testing and certification processes are conducted by licensed asbestos assessors according to legislation.

Site locations include domestic, commercial, demolition and construction, ships, soils and fences.

Occupational licenses are required nationally. Work must be completed according to relevant legislation, the Code of Practice for the Safe Removal of Asbestos, industry guidelines, customer and organisational requirements, including work health and safety (WHS) policies and procedures, and regulatory requirements.

This unit is required for all supervisors of the ACM removal process. Candidates wishing to supervise friable ACM removal must complete CPCCCE3015 Remove friable asbestos. Candidates wishing to supervise non-friable ACM removal must complete CPCCCE3014 Remove non-friable asbestos.

Candidates are advised to check for regulatory requirements relating to relevant industry experience for licensing purposes.

Pre-requisite Unit

CPCCCE3014 Remove non-friable asbestos

CPCCCE3015 Remove friable asbestos

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|---------------------------------------|------|---|
| 1 | Plan supervision of asbestos removal. | 1.1 | Obtain and interpret work instructions, client's brief, asbestos register, if available, and relevant information to ensure a compliant removal process. |
| | | 1.2 | Develop asbestos removal control plan (ARCP) and safe work method statements (SWMS). |
| | | 1.3 | Inspect worksite to identify scope of job and conduct initial preparations according to ARCP and SWMS. |
| | | 1.4 | Identify and notify regulator and all parties affected by removal of ACM. |
| | | 1.5 | Confirm staffing and competency requirements for the job. |
| | | 1.6 | Confirm health monitoring of workers is being undertaken. |
| | | 1.7 | Calculate quantity of ACM to be removed and materials and equipment required for the job. |
| | | 1.8 | Identify licensed asbestos disposal facility for transport and disposal of asbestos according to environmental regulatory obligations and record in ARCP. |
| | | 1.9 | Prepare and plan for air monitoring and a clearance inspection by a licensed asbestos assessor (friable) or competent person (non-friable). |
| | | 1.10 | Identify, source and ensure serviceability of plant, tools, equipment and personal protective equipment (PPE). |
| | | 1.11 | Plan work schedules to ensure compliant supervision of the asbestos removal job. |
| 2 | Oversee the | 2.1 | Maintain required on-site records. |

- preparation for asbestos removal.
- 2.2 Induct workers and provide the ARCP for safe and compliant operation of the job.
 - 2.3 Ensure PPE for workers is provided and stored on site.
 - 2.4 Ensure signage and barricades are erected to delineate the asbestos work area from the worksite in accordance with the ARCP.
 - 2.5 Manage the serviceability checks for equipment and tools conforming with manufacturer specifications for use.
 - 2.6 Ensure that utilities are deactivated and secured, and relevant persons are notified prior to commencing work.
 - 2.7 Identify asbestos waste storage and waste transit route according to site-specific ARCP.
- 3 Supervise compliant testing.
- 3.1 Communicate with the licensed asbestos assessor to ensure compliance with legislative requirements for air monitoring and enclosure integrity.
 - 3.2 Check conformity of air monitoring test result in consultation with licensed asbestos assessor and apply relevant action in accordance with regulatory requirements.
 - 3.3 Notify health and safety regulator if air monitoring levels are above 0.02 fibres/millilitre.
 - 3.4 Post daily air monitoring readings on the worksite according to legislative requirements.
- 4 Supervise removal and decontamination processes.
- 4.1 Manage ongoing serviceability checks for equipment and tools conforming with manufacturer specifications for use.
 - 4.2 Supervise removal of asbestos according to the ARCP and SWMS.
 - 4.3 Organise removal of ACM waste from site according to environmental regulatory obligations and ARCP.
 - 4.4 Supervise facilities and processes to ensure compliant decontamination of workers, work area and worksite,

- including plant, tools and equipment.
- 4.5 Secure site until clearance inspection is undertaken and clearance certificate has been received.
 - 4.6 Upon receiving clearance certificate ensure decontaminated plant, tools and equipment are removed from the work area.
 - 4.7 Supervise the dismantling of enclosures and relevant equipment (friable) and clean up.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria:

- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4051A Supervise asbestos removal.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE4008 Supervise asbestos removal

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4051A Supervise asbestos removal.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by supervising two different asbestos removal occasions.

In doing so, the candidate must:

- adhere to the asbestos removal control plan (ARCP), regulatory and environmental legislation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- relevant government building legislation, codes and standards
- rationale for, and principles underpinning, the ARCP and related legislation
- implementing the ARCP with control monitoring, clearance inspections and certifications
- using the certified work health and safety (WHS) management system and emergency plan
- hazards relating to friable ACM
- processes, procedures and techniques of asbestos removal
- workplace safety requirement
- plans, drawings and specifications, asbestos registers and documentation relating to asbestos removal
- organisation's quality assurance requirements
- environmental requirements and sustainability principles
- duties and obligations of the supervisory role
- contingency planning
- locations of friable and non-friable asbestos.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or simulated workplace environment.

Candidates must be provided with:

- access to a worksite or simulated work environment
- relevant government building legislation, codes and standards
- environmental requirements and sustainability principles
- organisational policies and procedures
- project plans and specifications
- appropriate documents, materials, tools, equipment and personal protective equipment (PPE) currently approved for use in industry, as per codes of practice, Australian Standards, requirements of legislation, regulations and requirements of workplace policies and procedures as required by Commonwealth, state and territory regulators.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCE5001 Conduct air monitoring and clearance inspections for asbestos removal work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5014A Conduct asbestos assessment associated with removal. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to visually inspect and use a range of measuring devices to undertake the monitoring of airborne asbestos fibres in the workplace as an integral part of identifying hazards, assessing risks, monitoring the effectiveness of controls, and ensuring that the workplace is free of visible asbestos fibres and air monitoring results are at acceptable levels prior to reoccupation.

The unit includes the planning of the monitoring process, the selection and use of processes and air-monitoring equipment, the conduct of the assessment process, and the proper handling and interpretation of results.

Asbestos assessment and air monitoring are required during all friable (Class A) asbestos removal and for non-friable (Class B) asbestos removal where a risk assessment indicates that airborne asbestos fibres may result from the removal activity.

Licenses are required in most states and territories. Work must be completed according to relevant legislative, code of practice, industry, customer and organisational requirements, including work health and safety (WHS) policies and procedures. Analysis of samples must conform to National Association of Testing Authorities (NATA) or other accredited laboratory requirements and standards.

The model WHS regulations and the Code of Practice: How to safely remove asbestos (2018) outlines regulatory requirements for clearance inspections, air monitoring (the Membrane Filter Method for Estimating Airborne Asbestos Fibres) and certification.

Candidates are advised to check for specific jurisdictional regulatory requirements.

Pre-requisite Unit

Nil.

Unit Sector

Demolition.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|--|------|--|
| 1 | Plan for assessment of asbestos removal. | 1.1 | Confirm scope, timelines and budget for the project with the client and asbestos removalist. |
| | | 1.2 | Identify type of asbestos containing material (ACM), its location, friability and condition by reference to the asbestos register and consultation with workplace personnel and client. |
| | | 1.3 | Research and confirm legislation, regulations, code of practice and standards to inform the planning process, risk identification and to ensure a compliant and independent assessment process. |
| | | 1.4 | Prepare required reports in a timely manner and according to the requirements of the specific audience and the legislation, regulations, code of practice and standards. |
| | | 1.5 | Research and confirm characteristics of and health impacts from exposure to ACM and the rationale for air monitoring processes. |
| | | 1.6 | Identify accreditation framework and roles and responsibilities of personnel involved. |
| | | 1.7 | Identify processes used in the compliant removal of friable and non-friable asbestos using enclosures and leak testing, decontamination units, personal respirators and negative pressure equipment. |
| | | 1.8 | Collect, review and use worksite documentation to inform the planning process. |
| | | 1.9 | Define areas within the worksite where measurements are to be taken. |
| | | 1.10 | Select measuring equipment specific to the hazard and condition of the ACM, the environment, the activities being carried out and level of risk. |

- 1.11 Recognise limits of own expertise and available equipment and seek expert advice and equipment as appropriate.
 - 1.12 Undertake risk assessment and select suitable control measures.
 - 1.13 Identify and source equipment, including personal protective equipment (PPE), required to carry out the job.
 - 1.14 Document confirmed planning with the client, asbestos removalist and supervisor.
- 2 Collect site measurements and other data.
 - 2.1 Arrange with and advise workers on-site of the requirement to collect information and data to facilitate the measurement and monitoring process.
 - 2.2 Conduct site visit and complete a visual inspection in consultation with client and stakeholders and according to legislation, regulations, code of practice and standards.
 - 2.3 Establish sampling schedule and strategy.
 - 2.4 Identify and record effective air monitoring locations for each asbestos removal task.
 - 2.5 Conduct sampling process in consultation with relevant site personnel and as stated in the standards specified for membrane filter method for estimating airborne asbestos fibres.
 - 2.6 Revise sampling schedule and strategy after site inspection and in consultation with asbestos removalist and worksite manager or supervisor.
 - 2.7 Develop and provide air monitoring program consisting of locations and schedule to asbestos removalist and supervisor.
 - 2.8 Check operability of monitoring equipment according to manufacturer specifications, organisational procedures and professional standards.
- 3 Use measuring devices to collect site
 - 3.1 Select air-monitoring equipment, check calibration records, calibrate equipment and determine appropriate flow rate according to accredited laboratory requirements

- information and data.
- 3.2 Use and maintain equipment correctly to accurately collect data.
 - 3.3 Follow workplace safety procedures during the collection process.
 - 3.4 Collect required volumes of air samples according to the membrane filter method, label and replace the filter holders according to the sampling schedule and plan.
 - 3.5 Collect information and data and record results noting where samples were taken and ensuring compliance with chain of custody protocols.
 - 3.6 Put in place processes and make checks to ensure all data is collected under the control of a NATA or other accredited laboratory and according to industry standards and legislative requirements.
 - 3.7 Dismantle, decontaminate and dispose of parts or equipment according to regulations, code of practice and workplace procedures.
 - 3.8 Store equipment correctly or make ready for re-use.
 - 3.9 Service and maintain sampling equipment according to professional standards and manufacturer specifications.
 - 3.10 Complete a visual inspection within enclosure and undertake air monitoring within the enclosure for areas where friable asbestos has been removed.
 - 3.11 Complete a visual inspection of work area where non-friable asbestos has been removed.
- 4 Complete the monitoring process.
- 4.1 Label and prepare filter for despatch to the laboratory, ensuring correct handling procedures for filters and chain of custody requirements.
 - 4.2 Seek confirmation of the exact nature of fibres where necessary.
 - 4.3 Retain and store samples in labelled containers.
 - 4.4 Assess site set-up, removal, breakdown and decontamination procedures according to legislative and

- code of practice requirements.
- 4.5 Implement documentation and processes to ensure the compliant transportation of samples.
- 5 Document results.
- 5.1 Interpret and evaluate results received from the NATA or other accredited laboratory against the recognised standard.
- 5.2 Perform further calculations as required on the technical data received from the NATA or other accredited laboratory.
- 5.3 Document outcomes from the technical analysis and make recommendations regarding exposure and control monitoring processes.
- 5.4 Liaise with asbestos removalist immediately if air monitoring results are above action levels.
- 5.5 Prepare concise, logical and accurate report that addresses regulatory requirements and is in the form required by audience.
- 5.6 Visually inspect worksite to ensure compliance with procedures prior to issuing a clearance certificate.
- 5.7 Complete and issue clearance certificate according to legislative, regulatory and code of practice requirements.
- 5.8 Retain and store results and records in a readily retrievable format according to regulatory requirements and standards.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria:

- technology skills to:
 - use mobile and communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation
- mathematical skills to:

- undertake complex calculations.

Unit Mapping Information

Supersedes and equivalent to CPCCE5014A Conduct asbestos assessment associated with removal.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE5001 Conduct air monitoring and clearance inspections for asbestos removal work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC5014A Conduct asbestos assessment associated with removal. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by conducting two asbestos assessments.

This must include a friable asbestos removal environment where air monitoring is normally undertaken with the use of the membrane filter method as a minimum.

In doing this, the candidate must:

- apply scientific and technical principles that underpin the asbestos containing material (ACM) removal assessment process
- collect and handle samples in a manner that ensures the integrity of the sample complies with the protocols for the chain of custody
- collect, compile, interpret and analyse measurements, information and data related to the removal process and produce a report
- conduct site inspections, prepare advice to clients, complete clearance inspections and provide clearance certification relating to removal of ACM that complies with the requirements of relevant legislation, regulations, codes of practice and standards.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the compliance requirements of the relevant Australian Standards, Building Code of Australia (BCA), model codes of practice, environmental and work health and safety (WHS) legislation
- range of materials manufactured using asbestos, the type and characteristics of asbestos used in each material, and the usual applications associated with the material
- legislation, regulations, codes of practice and standards
- project plans, specifications, quality documentation and manufacturer's instructions
- environmental requirements and sustainability principles
- characteristics and health impacts of exposure to ACM

- application, methodologies and techniques of compliant removal of asbestos
- determining factors in area in which measurements are to be taken
- scientific techniques for measuring, testing, evaluating air monitoring results and reports
- requirements for professional indemnity and other insurances required by legislation and to mitigate business risk
- general construction terminology
- risk assessment and contingency planning relating to asbestos removal
- operational and functional features of plant, equipment and tools.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- government building legislation codes and standards
- Code of Practice: *How to safely remove asbestos (2018)* and *How to manage and control asbestos in the workplace (2018)* and the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition*
- manufacturer's specification and installation instructions
- organisational policies and procedures
- project plans and specifications
- sufficient equipment and materials and testing instruments to conduct asbestos assessment associated with removal.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCDDO2011 Handle and position dogging tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCDDO2011A Handle and use dogging tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to handle and locate dogging tools and equipment. It includes selecting, moving, locating, positioning and storing dogging tools and equipment.

It applies to those who work under the direction of more experienced workers to support dogging activities.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Dogging

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to handle, move and

1.1 Read work order and associated documentation and clarify work tasks with relevant persons.

- | | | |
|---|-----|--|
| locate dogging tools and equipment. | 1.2 | Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements. |
| | 1.3 | Select dogging tools and equipment, check for serviceability and rectify or report identified faults. |
| | 1.4 | Select and fit personal protective equipment (PPE) appropriate for work activities. |
| 2 Handle, move, sort and stack dogging tools and equipment. | 2.1 | Move dogging tools and equipment manually using safe manual handling techniques. |
| | 2.2 | Stack or band dogging tools and equipment for mechanical handling in accordance with the type of material and the plant or equipment to be used. |
| | 2.3 | Load, unload, move or locate dogging tools and equipment at specified location, assist mechanical handling equipment operator and ensure safe handling. |
| | 2.4 | Sort dogging tools and equipment to suit load type and size, and stack for ease of identification and retrieval in accordance with task sequence and job location. |
| | 2.5 | Protect dogging equipment and associated tools against physical and water damage, and store clear of access ways for ease of identification, retrieval and distribution. |
| 3 Store dogging tools and equipment. | 3.1 | Use safe handling techniques to manually or mechanically handle and move dogging tools and equipment to storage area after concluding dogging task. |
| | 3.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCDDO2011A Handle and use dogging tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCDDO2011 Handle and position dogging tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCDDO2011A Handle and use dogging tools and equipment. Updated to meet the Standards for Training Packages 1012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by handling and positioning dogging tools and equipment for three different dogging tasks.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for handling and positioning dogging tools and equipment under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - signage
 - environmental and worksite safety plans
 - reporting problems
- interpreting task plans and specifications relating to safely handling and locating dogging tools and equipment
- types, characteristics, uses and limitations of dogging tools and equipment:
 - single leg slings
 - four leg slings
 - chain slings
 - synthetic webbing slings
 - two leg slings
 - brick cages
 - chocks and wedges
 - flexible steel wire rope (FSWR)
 - kibbles

- natural ropes
- packers
- personnel box
- rigging screws
- shackles and eye bolts
- spreader beams
- turn buckles
- processes for assisting mechanical handling equipment operator, including signalling methods
- requirements for cleaning up work area, maintaining and storing tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCDDO3011 Perform dogging

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCDDO3011A Perform dogging. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to undertake basic dogging work for the purpose of shifting loads mechanically both in sight and out of sight of the crane operator. The unit includes selecting sling types and sizes and maintaining the stability of the load.

It applies to workers using dogging tools and equipment, who would be expected to take responsibility for organising and completing work tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Dogging

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to perform dogging.

1.1 Interpret work order and associated documentation and clarify requirements with relevant persons.

- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.
 - 1.3 Select tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
 - 1.4 Confirm task sequencing schedule with relevant persons to ensure coordination.
 - 1.5 Calculate load mass and confirm using load charts and standard calculations.
 - 1.6 Calculate loads in slings and equipment to suit task requirements.
- 2 Sling load.
- 2.1 Erect required safety signage and barricades and select and fit personal protective equipment (PPE).
 - 2.2 Assemble lifting devices and erect for load movement.
 - 2.3 Sling load to lifting device ready for lifting, using appropriate load slinging method.
- 3 Shift load.
- 3.1 Shift load to ensure stability, in compliance with safe work method statement (SWMS).
 - 3.2 Direct load to landing position using appropriate communications in accordance with relevant Australian Standards and workplace requirements.
 - 3.3 Land load in required position on packing or bearers.
- 4 Remove dogging equipment from load.
- 4.1 Dismantle load shifting equipment and inspect for wear. Complete required logbook and site records in accordance with workplace requirements.
 - 4.2 Dismantle load shifting equipment and inspect for wear. Complete required logbook and site records in accordance with workplace requirements.

- 5 Clean up.
 - 5.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 5.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to interpret non-verbal communication such as hand signals.

Unit Mapping Information

Supersedes and is equivalent to CPCDDO3011A Perform dogging.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCDDO3011 Perform dogging

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCDDO3011A Perform dogging. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by performing dogging to sling, load, direct and land three loads including:

- one flexible load with a minimum of three lifting points
- one load out of sight of the lifting device operator.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for performing dogging under applicable Commonwealth, state or territory work health and safety (WHS) legislation, Australian Standards and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - environmental and worksite safety plans
 - reporting problems
- mathematical processes for calculating load mass
- assessment of weather and ground conditions relating to performing dogging
- types, characteristics, uses and limitations of dogging and lifting equipment
- load-slinging techniques
- dogging techniques
- safe working load tags
- lifting equipment operations and limitations
- signalling methods
- safe working at heights requirements and fall arrest systems

- processes for completion of logbooks and site records
- requirements for cleaning up work area, maintaining and storing tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCDO3012 Perform crane scheduling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCDO3012A Perform crane scheduling. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to schedule dogging operations to ensure safe, efficient and effective use of cranes within the overall daily site plan and operations on a construction site or other worksite where dogging operations are used.

It includes coordinating and organising loads in order to meet the requirements of various construction elements of a project.

It applies to workers performing crane scheduling activities who would be expected to take responsibility for organising and completing work tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Dogging

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare crane task schedule.
 - 1.1 Review work instructions and associated documentation to clarify crane task scheduling requirements.
 - 1.2 Assess each task to calculate time required for task completion and most efficient order for crane tasks to coordinate with other site activities.
 - 1.3 Prepare crane task sequencing schedule so that it enhances the safe work method statement

- 2 Implement crane task schedule.
 - 2.1 Provide and clarify crane task sequencing schedule with relevant persons.
 - 2.2 Discuss and clarify crane task sequencing schedule and contingency plans with relevant persons.
 - 2.3 Coordinate and modify crane task sequencing schedule as other onsite activities progress or are modified, and advise relevant persons of changes.
 - 2.4 Coordinate and modify crane task sequencing schedule when a change is required, and advise relevant persons of changes.
 - 2.5 Apply work completion procedures when scheduled crane tasks are completed in accordance with workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCDDO3012A Perform crane scheduling.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCDDO3012 Perform crane scheduling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCDDO3012A Perform crane scheduling.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by scheduling the correct sequence of lifts for a minimum of three crane lifts.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for performing crane scheduling under applicable Commonwealth, state or territory work health and safety (WHS) legislation, Australian Standards and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - environmental and worksite safety plans
 - reporting problems
- techniques for performing crane task sequencing scheduling:
 - assessing lifting tasks for time required for completion
 - determining most efficient order for lifting tasks to coordinate with other site activities and to use resources efficiently
 - documenting schedules
 - modifying schedules
 - communicating schedules and changes to schedules to relevant persons
 - implementing work completion procedures.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJN2001 Assemble components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN2001A Assemble components.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to assemble manufactured components to form a completed constructed unit, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare. 1.1 Read and interpret work instructions and plan sequence

- of work.
- 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Assemble and hold components in place.
- 2.1 Select component parts for assembly and prepare hardware.
 - 2.2 Select and use packing material for protection of surfaces during assembly.
 - 2.3 Apply adhesive according to specifications.
 - 2.4 Locate and hold components in their designed assembled positions.
- 3 Secure assembled components.
- 3.1 Secure frame or unit using appropriate assembly methods.
 - 3.2 Secure fastened joints by fasteners or hardware.
- 4 Finish assembly and clean up.
- 4.1 Dismantle assembly and holding system.
 - 4.2 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.3 Check, maintain and store tools and equipment and

report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJN2001A Assemble components.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJN2001 Assemble components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN2001A Assemble components.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by assembling components to complete three of the following assembled units:

- door frame
- window frame
- door
- louvres
- fitments, including cupboards, counters, shelving and robes
- shopfront
- stairs
- window sash.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards relevant to assembling components
- workplace quality policies and standards for assembling components
- safety requirements for assembling components
- types and uses of tools and equipment for assembling components
- processes for assembling constructed units:
 - door frames
 - window frames
 - doors
 - louvres
 - fitments, including cupboards, counters, shelving and robes
 - shopfronts
 - stairs
 - window sashes

- assembly methods using the following:
 - clamps
 - cramps
 - packers and wedges
 - presses.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJN2003 Package manufactured products for transport

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN2003A Package manufactured products for transport. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to use packaging systems to protect finished products from damage during transportation, meeting all relevant requirements of work health and safety (WHS) and Commonwealth and state or territory legislation.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
|---------------------|---|

- 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
- 2 Select packaging.
- 2.1 Select packaging materials following specifications.
 - 2.2 Select wrapping, enclosing and packaging techniques.
 - 2.3 Select special packaging required for bulk, finished or valuable products.
- 3 Pack, cover and secure items for transport.
- 3.1 Use packaging processes to enclose and protect products for handling and transportation.
 - 3.2 Select and use loose packaging such as cover sheets, packing blankets and packaging cushions.
 - 3.3 Cover, pack and secure packaged products for transportation.
- 4 Clean up.
- 4.1 Clean up, meeting all legislative and workplace requirements for materials handling, safety, packaging reuse and recycling, and waste disposal.
 - 4.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJN2003A Package manufactured products for transport.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJN2003 Package manufactured products for transport

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN2003A Package manufactured products for transport. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by packaging a range of products and loading them for transportation using:

- three of the following packaging materials:
 - packing blankets
 - corrugated paper
 - bubble wrap
 - pallet wrapping
 - polystyrene foam moulding
 - shrink packaging
 - stretch wrap
 - timber
 - banding
- two of the following packaging processes:
 - banding applied to stacks and bundles to maintain stack stability
 - boxes and crates constructed to enclose and protect products
 - separation packing applied to stacked and bundled products.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Commonwealth and state or territory legislation relevant to packaging manufactured products for transport
- workplace quality policies and standards for packaging manufactured products for transport
- safety requirements for packaging manufactured products for transport
- recycling and reuse of packaging materials
- types and uses of tools and equipment for packaging manufactured products for transport

- packaging materials:
 - corrugated paper
 - bubble wrap
 - pallet wrapping
 - polystyrene foam moulding
 - shrink packaging
 - stretch wrap
 - timber
 - banding
- packaging processes:
 - banding applied to stacks and bundles to maintain stack stability
 - boxes and crates constructed to enclose and protect products
 - separation packing applied to stacked and bundled products
- basic packaging techniques
- protection requirements for packaging manufactured products for transport
- measurement and calculations for packaging manufactured products for transport.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJN3002 Use computer-controlled machinery

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in Mapping corrected for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN3002A Use computer-controlled machinery. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to program, load and operate computer-controlled machinery for the production of components, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes using computer-controlled machinery for multiple production processes or designed finishes with manufacturing applications in shopfitting, joinery and stair-building work.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.3 Select tools and equipment, check for serviceability and report any faults. |
| | 1.4 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select materials required for task, handle safely and prepare and position ready for use. |
| 2 Input data and adjustments into computer numerical control (CNC) machinery. | 2.1 Determine programming methods for task requirements and machine specifications. |
| | 2.2 Edit computer program to produce straight and circular tool movements, compensating for tool profiles. |
| 3 Transfer program into machine memory and operate machine. | 3.1 Determine methods of transferring program into machine memory. |
| | 3.2 Load program into machine memory using acceptable method. |
| | 3.3 Test program operations through dry-run/simulation mode. |
| | 3.4 Produce specified work piece using automatic mode. |
| 4 Clean up. | 4.1 Clean up, meeting all legislative and workplace |

requirements for safety, waste disposal and materials handling.

- 4.2 Check, maintain and store plant, tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJN3002A Use computer-controlled machinery.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJN3002 Use computer-controlled machinery

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error in Mapping corrected for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN3002A Use computer-controlled machinery. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by producing two different components using computer-controlled machinery:

- from at least two of the following materials:
 - acrylics
 - aluminium
 - medium density fibreboard (MDF)
 - particle board
 - melamine-faced material
 - plywood
 - timber
- using at least two of the following program operations:
 - boring
 - cutting
 - forming and shaping
 - milling
 - sculpting.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards relevant to using computer-controlled machinery
- workplace quality policies and standards relevant to using computer-controlled machinery

- safety requirements for using computer-controlled machinery
- type, range and characteristics of materials used with computer-controlled machinery:
 - acrylics
 - aluminium
 - medium density fibreboard (MDF)
 - particle board
 - melamine-faced material
 - plywood
 - timber
- application of software used to operate specific computer-controlled machinery:
 - boring
 - cutting
 - cutting and polishing
 - forming and shaping
 - milling
 - sculpting
- measuring techniques used in computer-controlled machinery
- types and uses of computer-controlled machinery.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJN3003 Manufacture components for doors, windows and frames

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCJN3003A Manufacture components for doors, windows and frames. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manufacture components for doors, windows and frames, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect workplace, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 2 Dress materials.
 - 2.1 Check machines and cutting tools for safe and effective operation.
 - 2.2 Adjust machine settings for task requirements.
 - 2.3 Position and cut material, check for quality and rectify faults.
 - 3 Shape materials.
 - 3.1 Check spindles, cutting tools and jigs for safe and effective operation.
 - 3.2 Adjust spindle machine settings for task requirements.
 - 3.3 Feed material into machine and operate machine to shape material.
 - 4 Join materials and produce components.
 - 4.1 Set out materials for joining.
 - 4.2 Check joining machines, cutting tools and jigs for safe and effective operation.

- 4.3 Adjust joining machine settings for task requirements.
 - 4.4 Operate machine to produce joints.
- 5 Finish components and prepare for assembly.
 - 5.1 Check finishing and sanding machines for safe and effective operation and adjust for task requirements.
 - 5.2 Dry-assemble components, check for quality and consistency, and rectify faults.
 - 5.3 Sand and finish components, check for quality and consistency, and rectify faults.
- 6 Clean up.
 - 6.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 6.2 Clean, check, maintain and store machines, tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJN3003A Manufacture components for doors, windows and frames.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJN3003 Manufacture components for doors, windows and frames

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN3003A Manufacture components for doors, windows and frames. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by machining, dry-assembling and finishing components for:

- a four-panelled door and door frame
- a four-light operable sash and frame.

In performing these tasks, the candidate must:

- prepare and assemble the following components:
 - door stops
 - jambs
 - mullion
 - panels
 - sills/threshold
 - styles
 - top, bottom and mid rail
 - glazing bars
- use the following machines:
 - band saws
 - docking saws
 - rip saws
 - panel saw
 - planing machines:
 - surface planer

- thicknesser
- shaping machines
- joining machines:
 - mortising
 - tenoning
- sanding machines:
 - finisher
 - wide belt/stroke.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code (NCC) and Australian Standards relevant to manufacturing door and window components
- workplace quality policies and standards relevant to manufacturing door and window components
- safety requirements for manufacturing door and window components
- processes and techniques used to manufacture door and window components, including to:
 - set out door and window components:
 - door stops
 - jambs
 - mullion
 - panels
 - sills/threshold
 - styles
 - top, bottom and mid rail
 - glazing bars
 - produce cutting lists
- material identification marking systems used when manufacturing door and window components
- properties, performance and limitations of different types of timber available for manufacturing doors and window components:
 - plastic covered timber-cored material
 - raw timber
- range, type and characteristics of materials used to manufacture door and window components
- types and uses of machines, tools and equipment required to manufacture door and window components:
 - band saws
 - docking saws

- rip saws
- panel saw
- planing machines:
 - surface planer
 - thicknesser
- shaping machines
- multi-head moulding machines
- joining machines:
 - mortising
 - tenoning
 - horizontal borer
- sanding machines:
 - disk sander
 - finisher
 - wide belt/stroke
- processes for operating machines:
 - setting up processes
 - safety checking, fault finding and rectification
 - monitoring machine processes
 - cleaning and maintaining machines in accordance with manufacturers' specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJN3004 Manufacture and assemble joinery components

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.
- Rectified PC 3.1 from 'components in their assembled positions' to Check components for accuracy, quality and suitability by dry-assembling components in their assembled positions'
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCJN3004A Manufacture joinery components. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to carry out machining and manufacturing and assembling joinery components, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect workplace, assess hazards and apply risk controls.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 2 Manufacture components.
 - 2.1 Determine types of component parts from working drawings and specifications.
 - 2.2 Select processes for manufacture, joining techniques and components.
 - 2.3 Select machines to be used and plan sequence of machining.
 - 2.4 Check safety requirements for each machine for compliance with WHS requirements and AS 1473 Guarding and safe use of woodworking machinery.
 - 2.5 Determine space requirements for manufacture of components.
 - 2.6 Use machine to manufacture components to working drawings and specifications.
 - 3 Assemble components.
 - 3.1 Check components for accuracy, quality and suitability by dry-assembling components in their assembled positions.

- 3.2 Assemble and secure components using adhesive and mechanical fasteners to specification.
 - 3.3 Check assembled units for square, free of wind and with adhesive removed.
- 4 Check and assembled units and prepare for packaging.
 - 4.1 Inspect assembled units for faults and take appropriate remedial action.
 - 4.2 Make units ready for packaging by protecting material edges and surfaces and stacking.
- 5 Clean up.
 - 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, recycling and re-use and materials handling.
 - 5.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJN3004A Manufacture joinery components.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJN3004 Manufacture and assemble joinery components

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.1.
- Rectified PC 3.1 from ‘components in their assembled positions’ to Check components for accuracy, quality and suitability by dry-assembling components in their assembled positions.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCJN3004A Manufacture joinery components. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by manufacturing and assembling joinery components for two of the following:

- an opening sash and window frame
- a multi panelled door and frame
- a carcass unit or similar including door/s and drawer/s.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards relating to all aspects of manufacturing and assembling joinery components, including AS 1473 Guarding and safe use of woodworking machinery
- workplace quality policies and standards for manufacturing and assembling joinery components
- job safety analyses (JSAs), safe work method statements (SWMSs) and safety data sheets (SDSs)
- safety requirements for manufacturing and assembling joinery components
- environmental requirements for manufacturing and assembling joinery components
- types and uses of machines, tools and equipment required for manufacturing and assembling joinery components
- types of knock-down fittings and traditional joints.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJN3005 Cut and install glass

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN3005A Cut and install glass. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manually cut glass in a straight line to form simple shapes and install glass in joinery structures, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Cut glass to a straight line.
- 2.1 Select type, size and thickness of glass for application (thickness less than 6.38mm) and determine location from drawings, specifications and glazing schedule and in accordance with AS 1288 Glass in building - Selection and installation.
 - 2.2 Inspect openings to receive glass for obstructions and clearances.
 - 2.3 Select cutting process in accordance with AS 4667 Quality requirements for cut to size and processed glass and cut glass to specification on a line using straight edge and scoring and breaking to run cut to tolerance of AS 4667.
 - 2.4 Cut glass sheets to the most economical layout, identifying cutting defects and taking corrective action in accordance with AS 4667.
- 3 Cut glass to simple shapes.
- 3.1 Select type, size and thickness of glass for application and mark and prepare template to designed shape and requirements of AS 1288.
 - 3.2 Use template and marker to transfer outline onto glass.
 - 3.3 Cut glass to shape and size to specification and remove glass offcuts safely in accordance with AS 4667.

- 3.4 Cut glass sheets to the most economical layout, identifying cutting defects and taking corrective action in accordance with AS 4667.
- 4 Install glass to joinery.
 - 4.1 Prepare frame for installation of glass.
 - 4.2 Confirm dimensions of frame are adequate for installation of glass.
 - 4.3 Install glass to frame.
 - 4.4 Clean glass surface and surrounding frame and remove waste material.
- 5 Clean up.
 - 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling, including handling glass.
 - 5.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJN3005A Cut and install glass.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJN3005 Cut and install glass

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJN3005A Cut and install glass. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- cutting glass for installation in a joinery structure, including cutting glass in a straight line to form a simple shape
- installing the cut glass in the joinery structure.
-

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to cutting and installing glass, including AS 4667 Quality requirements for cut to size and processed glass and AS 1288 Glass in buildings - Selection and installation
- workplace quality policies and standards for cutting and installing glass
- safety requirements for cutting and installing glass
- types and uses of tools and equipment for cutting and installing glass
- methods of securing and sealing glass in frames
- material handling processes for glass
- measuring and setting out processes for glass cutting
- types of glass and their characteristics.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJN3100 Process materials to produce components using static machines

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and equivalent to CPCCJN3001 Process materials to produce components using static machines. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to use static machines for manufacturing processes of components, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
|---------------------|---|

- 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and rectify or report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task and as required for using each machine.
 - 1.5 Inspect workplace, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Select static machines and determine operation and safety requirements.
- 2.1 Select types and functions of static machines for use in task.
 - 2.2 Determine methods of operation of machines from manufacturers' operating manuals and safe operating procedures.
 - 2.3 Locate cut-off switches and implement WHS requirements for guard attachment and cut-off switches in accordance with Australian Standards.
 - 2.4 Implement WHS requirements for personal protective equipment (PPE) associated with using machines.
- 3 Prepare machines for use.
- 3.1 Determine and follow guarding and safety requirements for preparing and using each static machine.
 - 3.2 Set up machines for required operating process and setting with fences and guides locked in position in accordance with Australian Standards.
- 4 Operate machines.
- 4.1 Follow machine start-up procedures to manufacturers' recommendations and safe operating procedures.

- 4.2 Feed material to machines following manufacturers' recommendations, safe handling procedures and safe operating procedures, including use of push blocks and sticks.
 - 4.3 Set up and hold material in place, ensuring correct hand position, for moving table operations following manufacturers' recommendations.
 - 4.4 Operate machines safely in accordance with designed capacity and purposes.
 - 4.5 Follow machine workplace shut-down procedures following manufacturers' recommendations.
- 5 Maintain machine and attachments.
- 5.1 Maintain machines by regular servicing to manufacturers' recommendations.
 - 5.2 Report faults to supervisor.
 - 5.3 Assist with fitting and securing cutters, blades and attachments, and recalibration following manufacturers' recommendations.
- 6 Clean up.
- 6.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 6.2 Clean, check and store cutters, blades and attachments following manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCJN3001 Process materials to produce components using static machines.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJN3100 Process materials to produce components using static machines

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCJN3001 Process materials to produce components using static machines. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by using at least five of the following static machines in the production of a minimum of three different components:

- band saws
- buzzers (jointer/surface planer)
- spindle moulders
- tenon machine
- docking saws
- grinders
- mortisers
- multi-drill machine
- rip saws
- table sanders
- thicknessers
- panel saws
- vertical and horizontal drills.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to processing materials to produce components
- workplace quality policies and standards relevant to processing materials to produce components
- safety requirements for processing materials to produce components
- types and uses of static machines:
 - band saws

- buzzers (jointer/surface planer)
- spindle moulders
- tenon machine
- docking saws
- grinders
- mortisers
- multi-drill machine
- rip saws
- table sanders
- thicknessers
- panel saws
- vertical and horizontal drills
- types of tools and equipment required when using static machines
- common materials processed using static machines to produce components
- basic maintenance of static machines.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJS3002 Manufacture stair components for straight flighted stairs

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCJS3002A Manufacture stair components for straight flighted stairs. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manufacture components for straight-flight stairs, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes manufacturing cut and closed stringers, newels, balusters, risers, treads, handrails, landing joists, glue blocks and wedges.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare stringers.
 - 2.1 Set-out stringers for treads and risers with nosing marked accurately and housings cut to set-out and depth.
 - 2.2 Apply grooves or mortises to receive balusters to set-out.
 - 2.3 Cut stringers to set-out shape and mark to accommodate treads and risers and junction with newels or landing.
- 3 Prepare newel posts.
 - 3.1 Cut and make housings to newel post set-out and required depth.
 - 3.2 Cut mortises to set-out and required depth, and mark newel posts for identification.
- 4 Prepare treads, risers and wedges.
 - 4.1 Cut treads to specified length and shape.
 - 4.2 Cut risers to designed length, shape and quantity, and apply markings for junctions, stringers and wedges.
 - 4.3 Cut wedges to specified pitch.

- | | | | |
|---|---------------------------------------|-----|---|
| 5 | Prepare balustrade. | 5.1 | Manufacture handrail with groove run for balusters. |
| | | 5.2 | Set-out mortises for balusters in handrail. |
| | | 5.3 | Cut balusters to specification. |
| | | 5.4 | Cut manufactured handrail to length and mark sections. |
| | | | |
| 6 | Finish surface and preassemble stair. | 6.1 | Sand exposed surfaces of components to specification for finish. |
| | | 6.2 | Preassemble components to ensure stair will assemble correctly. |
| | | 6.3 | Disassemble components and prepare/store for transport. |
| | | | |
| 7 | Clean up. | 7.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | | 7.2 | Check, maintain and store tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJS3002A Manufacture stair components for straight flighted stairs.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJS3002 Manufacture stair components for straight flighted stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3002A Manufacture stair components for straight flighted stairs. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by manufacturing the following components for a set of straight-flight stairs with a minimum height of one metre, one side with a cut stringer and one side with a closed stringer:

- balusters
- glue blocks
- newel posts
- nosings
- risers
- stringers
- treads
- wedges

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to manufacturing components for straight-flight stairs
- workplace quality policies and standards for manufacturing components for straight-flight stairs
- safety requirements for manufacturing components for straight-flight stairs
- principles of stair design for straight flight stairs:
 - characteristics of common types of straight flight stairs
 - range of components required for straight flight stairs
 - stair construction and joining methods
- processes to read and interpret drawings and specifications for components required for straight flight stairs
- components of straight-flight stairs:

- balusters
- glue blocks
- newel posts
- nosings
- risers
- stringers
- treads
- wedges
- materials identification marking systems for manufacturing components for straight-flight stairs
- measuring and setting out processes applicable to stair construction
- types and uses of static machines, tools and equipment for manufacturing components for straight-flight stairs
- types of materials and their characteristics applicable to stair construction.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJS3003 Assemble and install stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3003A Assemble and install stairs.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to set out, assemble and install prepared components of straight flight stairs, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Measure stairwell, check against drawings and make adjustments or report issues.
 - 1.7 Check stair components to identify, rectify and/or report imperfections and variances from specifications.
- 2 Assemble and fix stringers and newel posts.
 - 2.1 Assemble and fix or temporarily support all stringers in position.
 - 2.2 Assemble and fix newel posts in position.
 - 2.3 Brace assembled stringers and newel posts temporarily in a vertical position.
- 3 Install treads and risers.
 - 3.1 Cut manufactured treads and risers to length, fit and fix to assembly, and check top flight to be true and square.
 - 3.2 Fit and wedge intermediate treads and risers to fit tight to housings.
- 4 Assemble and install landings.
 - 4.1 Fit and fix landing joists to level.
 - 4.2 Fit and fix nosing and flooring to specified finish and fit, and fix fascia to landing.
- 5 Install balustrade.
 - 5.1 Fit balusters and check for plumb.

- 5.2 Put newel posts in position, check for plumb, and fix.
- 5.3 Fit and check height of handrails, and fix.
- 6 Finish stair installation and clean up.
 - 6.1 Check assembled stairs for quality.
 - 6.2 Clear area and remove waste material.
 - 6.3 Fit glue blocks to treads and risers.
 - 6.4 Display signs to prevent use of stairs until adhesives have dried.
 - 6.5 Clean, maintain and store tools and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJS3003A Assemble and install stairs.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJS3003 Assemble and install stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3003A Assemble and install stairs.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by assembling and installing:

- one staircase, minimum six risers to be fixed to a wall, incorporating:
 - stringers
 - one landing
 - winders
 - a closed stringer and a cut stringer
 - a balustrade comprising handrail, balusters and newel posts.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to assembling and installing stairs
- workplace quality policies and standards for assembling and installing stairs
- safety requirements for assembling and installing stairs
- components of stairs:
 - balusters
 - flooring
 - handrails
 - landing joists
 - newel posts
 - nosing
 - risers
 - stringers
 - treads

- winders
- different stair types and implications for on-site installation
- processes to interpret drawings and specifications for assembly and installation of stairs
- levelling techniques used when installing stairs on site
- procedures for assembling stairs in correct sequence
- processes for taking accurate measurements and setting out stairs
- types and uses of tools and equipment required to assemble and install stairs
- stair construction and joining methods for different types of stair designs
- use, characteristics and limitations of adhesives, fixings and fasteners for installing stairs
- checks for assembled stairs:
 - joints are secure and clean
 - no creaks in timber
 - no pencil or construction markings
 - treads and riser distances are equal size and compliant.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJS3004 Manufacture and install continuous handrailing and special stair components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3004A Manufacture and install continuous handrailing and special stair components. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manufacture, join and install continuous handrailing and special stair components, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes wreaths, scrolls, bullnose steps and decorative features connecting straight lengths of handrail to wreaths or scrolls, with the use of handrail fittings or bolts to form a continuous handrail system.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.

- 2 Prepare wreath for continuous handrailing.
 - 2.1 Determine pitch of stair and change of direction of handrail from stair design.
 - 2.2 Set out wreath and assess total area required to determine thickness of material to be prepared.
 - 2.3 Prepare material, cut square to wreath length, and set-out to shape for dressing.
 - 2.4 Form wreath to square section with designated twist, and free of bumps.

- 3 Join and mould wreath to straight sections.
 - 3.1 Mould wreath to handrail shape and fine sand to smooth finish.
 - 3.2 Measure straight sections of handrail and cut to length with ends square to join wreath with tight joints.
 - 3.3 Pre-fit handrail in lengths, disassemble and rejoin in location.

- | | | |
|---|-----|---|
| 4 Manufacture scroll and wreath, and join to handrail. | 4.1 | Set out and prepare scroll and wreath to designed shape. |
| | 4.2 | Prepare materials to scroll and wreath dimensions, apply set out patterns and form scroll and wreath to basic shapes. |
| | 4.3 | Mould scroll and wreath to handrail shape and fine sand to smooth finish. |
| | 4.4 | Join scroll and wreath to handrail with tight joints. |
| 5 Manufacture and install bullnose treads. | 5.1 | Review design and method of constructing bullnose tread. |
| | 5.2 | Manufacture bullnose tread and riser and fix block support. |
| | 5.3 | Cut and dress tread with nosing to shape. |
| | 5.4 | Fit bullnose tread, riser and to stairs and secure in location. |
| 6 Manufacture and install brackets and decorative features. | 6.1 | Fix brackets and scotia and fix into place using the cut and mitred string method. |
| | 6.2 | Fix decorative features and sand surfaces to smooth finish to requirements. |
| 7 Clean-up. | 7.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | 7.2 | Check, maintain and store tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCS3004A Manufacture and install continuous handrailing and special stair components.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJS3004 Manufacture and install continuous handrailing and special stair components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3004A Manufacture and install continuous handrailing and special stair components. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- manufacturing the following special stair components:
 - wreath
 - bullnose tread
 - common stair brackets
 - decorative scroll with wreath
 - scotia
- joining the scroll and wreath to a straight handrail to produce one continuous handrail.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of the National Construction Code and Australian Standards relevant to manufacturing and installing continuous handrailing and special stair components
- workplace quality policies and standards for manufacturing and installing continuous handrailing and special stair components
- safety requirements for manufacturing and installing continuous handrailing and special stair components
- commonly used stair construction and joining methods for manufacturing and installing continuous handrailing and special stair components
- processes to interpret drawings and specifications for manufacturing and installing continuous handrailing and special stair components
- measuring and setting out processes for manufacturing and installing continuous handrailing and special stair components
- methods of forming and constructing handrails including using wreaths and ramps
- special feature components of stair construction

- timber carving and moulding techniques for manufacturing and installing continuous handrailing and special stair components
- types and uses of static machines, tools and equipment for manufacturing and installing continuous handrailing and special stair components
- types and characteristics of different stairs
- types and use of adhesives, fixings and fasteners applicable to stair construction
- types of materials and their characteristics applicable to the manufacture and installation of continuous handrailing and special stair components.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJS3005 Manufacture stair components for curved and geometric stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3005A Manufacture stair components for curved and geometric stairs. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare, cut, join and install stair components for curved and geometric stairs to a specified design and finish, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes manufacture, finishing and preassembly of stringers, stair posts, newel posts, treads, risers and balustrades.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Manufacture stringers for geometric curves.
 - 2.1 Prepare material to designed structural requirements.
 - 2.2 Construct curved wall or profile to curve design of stair.
 - 2.3 Set out developed pitch to curved wall or profile location.
 - 2.4 Manufacture and set out stringer to curved wall measurements and specifications.
- 3 Prepare stringers for assembly.
 - 3.1 Set out closed stringer for treads and risers with nosing marked accurately, housings cut to set out and depth.
 - 3.2 Prepare grooves or mortises to receive balusters.
 - 3.3 Prepare cut stringer to set-out shape and mark to accommodate treads and risers and junction with newel posts or landing.
- 4 Set out and
 - 4.1 Set out spiral stairs to specifications.

manufacture post for spiral stairs.	4.2	Manufacture or dress post to designed shape and set out to designed requirements of stair.
	4.3	Cut and make housings accurately to set-out and required depth.
5 Prepare newel posts for assembly.	5.1	Cut and make housings to newel set out and required depth.
	5.2	Cut and make mortises to set out and required depth, and mark newel posts for identification.
6 Cut treads, risers and wedges to length and shape.	6.1	Cut treads to designed length and shape.
	6.2	Cut risers to designed shape, length and requirement for junction with stringer.
	6.3	Mark wedges to design and cut to shape and quantity.
7 Prepare balustrade components.	7.1	Manufacture handrail with groove run and mortises for balusters made to set out.
	7.2	Cut balusters to designed length.
	7.3	Cut handrail length and mark sections for identification.
8 Finish surface and preassemble stair.	8.1	Sand exposed surfaces of components to specification and check components for fit.
	8.2	Preassemble components to ensure stair will assemble appropriately.
	8.3	Disassemble components and stack for transportation.
9 Clean up.	9.1	Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
	9.2	Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJS3005A Manufacture stair components for curved and geometric stairs.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJS3005 Manufacture stair components for curved and geometric stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3005A Manufacture stair components for curved and geometric stairs. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by manufacturing:

- components for a set of geometric stairs, one side with a cut stringer and one side with a closed stringer, with a minimum height of one metre and including:
 - balusters
 - glue blocks
 - newel posts
 - nosings
 - risers
 - stringers
 - treads
 - wedges
- a central post for a spiral stair.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to manufacturing components for curved and geometric stairs
- workplace quality policies and standards for manufacturing components for curved and geometric stairs
- safety requirements for manufacturing components for curved and geometric stairs
- commonly-used stair construction and joining methods
- processes for interpreting drawings and specifications for manufacturing components for curved and geometric stairs
- material identification marking systems for manufacturing components for curved and geometric stairs

- processes for measuring and setting out applicable to curved stair construction
- types and characteristics of different curved stair designs:
 - curved
 - spiral
 - geometric
 - cut and closed stringers
 - open and closed risers
- types of materials and their characteristics relating to stair construction
- range, types and limitations of different static machines used in the manufacture of components for curved and geometric stairs
- types and uses of tools and equipment for manufacturing components for curved and geometric stairs.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJS3006 Construct, assemble and install composite external stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3006A Construct fabricated stairs.
Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to construct and install stairs with one or more flights incorporating composite components, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

It includes installing treads, stringers, handrails and balustrades fabricated from composite (non-timber) materials.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.	1.1 Read and interpret work instructions and plan sequence
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of work.

- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Set out stair components.
- 2.1 Determine exit and ground finish levels from drawings and site location.
 - 2.2 Calculate rise, going and pitch of stair and check for compliance with requirements.
 - 2.3 Make full-size set out of stairs to determine rise, going and pitch of stairs to actual location of landings, stringers, treads and newel posts.
 - 2.4 Determine location of stair and newel posts from drawings and pitch of stairs and full-size set out.
 - 2.5 Mark location of footings to layout of designed stairs to meet drawings and specifications and full-size set out.
 - 2.6 Select material for stringers and check against set out.
 - 2.7 Select components for newel posts set-out to design of stairs, storey rods and drawings and full-size set out.
 - 2.8 Assemble newel posts and check to provide tight fit for stringers and bearers.
 - 2.9 Check material for treads against set out and square to length.

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| 3 Assemble and install stairs. | 3.1 | Prepare footings with post support. |
| | 3.2 | Attach tread supports to stringers to set-out. |
| | 3.3 | Erect newel posts and temporarily brace to plumb. |
| | 3.4 | Attach stringers to building using fixings and fasteners to maintain stair width. |
| | 3.5 | Fix treads and decking to location and bracing and lateral ties to newel posts. |
| 4 Fit and fix hand railing and balustrade. | 4.1 | Check material for hand railing and balustrade to length. |
| | 4.2 | Fit and fix hand railing into place above nosing line of a flight and above a landing deck. |
| | 4.3 | Fit and fix balustrade into place. |
| 5 Finish stairs. | 5.1 | Remove sharp edges and finish to specification. |
| | 5.2 | Adhere non-slip surface to treads. |
| 6 Clean up. | 6.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling. |
| | 6.2 | Check, maintain and store tools and equipment and report any faults. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJS3006A Construct fabricated stairs

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJS3006 Construct, assemble and install composite external stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3006A Construct fabricated stairs.
Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by constructing and installing one flight of composite external stairs from ground level to a minimum height of one metre, including a landing, handrail and balustrade to the open side of the flight and landing.

The handrail, balustrade, stringers and treads must be constructed of three or more composite materials.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to constructing and installing composite stairs
- workplace quality policies and standards for constructing and installing composite stairs
- safety requirements for constructing and installing composite stairs
- application of and requirements for line, level and plumb when constructing and installing stairs
- terminology used in the construction and installation of composite stairs
- processes for reading and interpreting plans, specifications and drawings for constructing and installing composite stairs
- types and uses of tools and equipment used to construct and install composite stairs
- processes for measuring and calculating material lengths and quantities for constructing and installing composite stairs
- stair construction techniques, including different methods of joining and fixing components
- range and characteristics of different stair types
- techniques used in the construction of composite stairs
- types and uses of materials used in composite stair construction:
 - metals

- concrete
- glass
- plastic composites
- timber
- types and uses of fixings and fastening used in fabricated stair construction.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCJS3011 Design and set out stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3011A Design and set out stairs.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to design and set-out materials for the manufacturing of stairs, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit includes the design and set-out of components for straight flighted stairs with cut or closed stringers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Carpentry and Joinery

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Read and interpret work instructions and plan sequence of work.

- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, check for serviceability and report any faults.
 - 1.4 Select and use personal protective equipment (PPE) for each part of the task.
- 2 Prepare stair design.
 - 2.1 Determine rise and going for steps and calculate lengths of stringers in compliance with NCC requirements and total rise of the stair.
 - 2.2 Calculate number of treads from number of rises and other requirements.
 - 2.3 Take and record landing measurements and requirements.
 - 2.4 Determine specifications for winders and incorporate into stair design.
 - 2.5 Design and draw stair and stair components and check for accuracy and completeness.
- 3 Prepare materials for setting out.
 - 3.1 Document material requirements for stair components and prepare detailed cutting list.
 - 3.2 Select, check and prepare materials for set out.
 - 3.3 Set out joins for laminated sections.
- 4 Set out stringers for a stair.
 - 4.1 Prepare steel square or pitch board to stair pitch set-out.
 - 4.2 Set out stringers and mark for junctions, newel posts, treads and risers.
- 5 Set out newel posts.
 - 5.1 Mark floor to landing height relationships with

- allowances for floor discrepancies on newel posts.
- 5.2 Set out newel posts to show positions of stringers, treads, flooring, joists, bearers and handrails.
 - 5.3 Mark locations for housings on newel posts.
- 6 Set out component parts.
- 6.1 Determine lengths and bevels from stringer and newel post set-outs.
 - 6.2 Set out component parts to respective lengths and bevels.
- 7 Clean up.
- 7.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 7.2 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCJS3011A Design and set out stairs.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCJS3011 Design and set out stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCJS3011A Design and set out stairs.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by designing and setting out the following two types of stairs:

- one straight flight staircase, minimum one metre in height
- one staircase, minimum one metre in height incorporating a quarter space landing and three winders.

One of the staircases must use a cut stringer and one must use a closed stringer.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to designing and setting out stairs
- workplace quality policies and standards relevant to designing and setting out stairs
- safety requirements for designing and setting out stairs
- types and uses of tools and equipment required for designing and setting-out stairs
- stair components:
 - balusters
 - bullnose tread
 - handrails
 - landing and landing joists
 - newels
 - risers
 - stringers
 - treads
 - winders
- materials for stairs, including:

- medium density fibreboard (MDF)
- plastics
- plywood
- steel
- timber
- methods for calculating lineal measurements used in stair design
- processes for measuring and setting out stairs
- processes for sketching stair drawings and required specifications
- range, types and limitations of materials used in stair construction
- types of stair design, their component parts and methods of joining components.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions and standards, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLDG3001 Licence to perform dogging

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCLDG3001A Licence to perform dogging.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely perform dogging work. Dogging consists of the application of slinging techniques to move a load, including the selection and inspection of lifting gear, and the directing of a plant operator in the movement of a load when the load is out of sight of the operator.

Dogging work is conducted in the construction industry and other industries where loads are lifted and moved using cranes or hoists.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

Nil.

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan task.
 - 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information.
 - 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements.
 - 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements.
 - 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment, including signs and barricades, personal protective equipment (PPE), and fall prevention and fall arrest equipment.
 - 1.5 Calculate load weight, dimensions and centre of gravity.
 - 1.6 Determine lifting and slinging points.
 - 1.7 Calculate derated working load limit (WLL) of lifting equipment resulting from selected slinging techniques.
 - 1.8 Establish required communication methods with plant operator.
 - 2 Select and inspect equipment.
 - 2.1 Select risk controls and equipment, including fall prevention and fall arrest equipment, and check that it is working and fit for purpose.
 - 2.2 Select and check PPE.
 - 2.3 Select lifting equipment and gear, inspect for defects, and isolate, tag out, report and record defective items.
 - 2.4 Select communication equipment and check that it is working and fit for use.
 - 3 Set up task.
 - 3.1 Establish and maintain communication with relevant persons to ensure lift plan and risk controls are communicated clearly, including any impact on other

- workplace activities.
- 3.2 Ensure risk controls and safety measures and equipment have been put in place.
 - 3.3 Prepare lifting equipment and gear for safe use.
 - 3.4 Consult with relevant persons to ensure that the load destination is stable, able to bear the load and prepared for safe access and landing.
 - 3.5 Attach and secure lifting equipment and gear to the plant-designated lifting point.
- 4 Perform task.
- 4.1 Direct plant designated lifting point/hook, over the load's centre of gravity.
 - 4.2 Attach and secure lifting equipment and gear to the load using slinging techniques.
 - 4.3 Attach and secure tag line as required to guide the load.
 - 4.4 Use signals and radio communication methods to direct the load movement, both in and out of sight of the plant operator.
 - 4.5 Conduct test lift to check the security of the slings and the stability of the load, lifting equipment and gear.
 - 4.6 Direct the movement of the load in accordance with lift plan, including lowering and landing.
 - 4.7 Disconnect lifting gear from the load and direct the positioning of crane or hoist for next task.
- 5 Pack up and clean up.
- 5.1 Remove excess materials from work area.
 - 5.2 Inspect lifting equipment and gear for defects, and isolate, label and report defective items.
 - 5.3 Store lifting equipment and gear in accordance with workplace requirements.
 - 5.4 Remove risk controls and safety measures and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLDG3001A Licence to perform dogging.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLDG3001 Licence to perform dogging

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCLDG3001A Licence to perform dogging.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by slinging and directing the movement of at least five loads of differing shapes, sizes and weights.

The loads must be moved by a slewing mobile crane of a maximum rated capacity of at least seven tonnes.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs), and equipment service and maintenance records and checklists
- perform all activities in compliance with safe work practices and workplace-specific procedures and policies, and check, use, maintain and store equipment in compliance with manufacturer requirements
- identify hazards and use appropriate risk controls and safety measures and equipment
- determine load weight and travel path in consultation with crane operator
- select and inspect appropriate lifting gear and apply slinging techniques appropriate to the type of load, its mass and centre of gravity
- identify the working load limit (WLL) tags of the lifting equipment and gear and calculate the deration of the WLL resulting from the slinging techniques applied
- make temporary connections to loads using fibre or synthetic ropes
- use radio communication and hand and whistle signals to guide the crane operator, including when the load is out of sight of the crane operator.

The candidate must use the following bends and hitches when slinging and directing the movement of loads:

- single sheet bend
- clove hitch

- rolling hitch
- bowline.

Load types must include:

- stillage containing at least ten scaffolding standards or loose steel pipes of 200 kg or more
- ten loose steel pipes, of at least 2 m length, that need wrapping
- an uneven load of at least two tonnes requiring slinging
- steel plate of at least 1.5 m x 2 m x 25 mm
- a round load with a minimum diameter of 300 mm and minimum length of 3 m.

The candidate must direct each load through at least 180 degrees of the crane's slewing radius.

Each of the following must be used at least once:

- flexible steel wire rope (FSWR) sling
- synthetic sling
- chain sling (including shortener)
- spreader bar or lifting beam
- tag line
- shackles
- eyebolts
- plate clamps.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for dogging under Commonwealth and state or territory work health and safety (WHS) legislation, standards and codes of practice
- workplace information, including legislative requirements covered by:
 - SWMSs
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records
 - manufacturer specifications and manuals
 - workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in dogging:

- instability of landing surfaces
- overhead and underground hazards
- insufficient lighting
- traffic
- weather
- pedestrian traffic
- work at heights
- risk controls and equipment:
 - traffic management plan
 - traffic barricades and control
 - exclusion zones
 - pedestrian barricades
 - PPE
 - lights
 - fall prevention and fall arrest equipment
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight and skin and sun protection
- hand, whistle and two-way radio communication, including signals for:
 - stop
 - hoist up and down
 - luff boom up and down
 - telescope in and out
 - slew left and right
- selection, inspection, care, handling, application, limitations and storage of dogging equipment and gear:
 - (FSWR sling
 - synthetic sling
 - chain sling (including shortener)
 - spreader bar or lifting beam
 - tag line
 - shackles
 - eyebolts
 - plate clamps
- slinging techniques
- load destination stability, load capacity and safe access for walking and unpacking the load:

- ground
- loading platforms
- suspended floors
- vehicles
- mathematical processes for calculating deration of WLL of lifting equipment and gear due to slinging techniques
- methods of making temporary connections to loads using fibre and synthetic ropes:
 - single sheet bend
 - clove hitch
 - rolling hitch
 - bowline.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction governing the licence are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace.

Candidates must have access to:

- a slewing mobile crane of at least seven tonnes maximum rated capacity, and lifting equipment and gear in a safe and compliant condition
- loads and equipment required to perform the tasks specified in the Performance Evidence
- a licensed crane operator to undertake lifting activity
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - incident reports
 - workplace procedures, including emergency plan
 - equipment manuals and manufacturer specifications.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLHS3001 Licence to operate a personnel and materials hoist

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLHS3001A Licence to operate a personnel and materials hoist. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely operate a personnel and materials hoist, that is, a cantilever or tower hoist or several winches configured to operate as a hoist intended to carry goods, materials or people.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

Nil.

Unit Sector

Licensing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan task.

1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information.

- 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements.
 - 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements.
 - 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment.
 - 1.5 Calculate load weight, check that it is within the working load limit (WLL) of the hoist and distribute it in accordance with manufacturer requirements.
 - 1.6 Establish required communication methods with relevant persons.
 - 1.7 Review emergency procedures in consultation with relevant persons.
- 2 Select and prepare equipment.
- 2.1 Put risk controls and safety measures and equipment in place in consultation with relevant persons.
 - 2.2 Access hoist safely.
 - 2.3 Visually check hoist for damage and defects.
 - 2.4 Carry out pre-start checks, including checking the hoist logbook and controls.
 - 2.5 Carry out operational checks, including testing hoist safety devices and checking for fire extinguisher and other emergency equipment.
 - 2.6 Ensure hoist is operating correctly and is free of obstructions.
 - 2.7 Check communication equipment, lighting and alarm systems to make sure they are working and fit for use.
 - 2.8 Conduct test run of hoist, check for abnormal noises and shut down, tag and report identified abnormalities as required.

- 2.9 Isolate, report, tag out and record defective equipment.
- 3 Conduct hoist operations.
 - 3.1 Maintain communication with relevant persons during hoist operations and emergency situations.
 - 3.2 Operate loaded hoist in accordance with manufacturer requirements.
 - 3.3 Use and interpret communication signals.
 - 3.4 Conduct emergency lowering in accordance with manufacturer requirements.
- 4 Shut down and secure hoist.
 - 4.1 Shut down hoist in accordance with manufacturer requirements.
 - 4.2 Carry out shut-down checks.
 - 4.3 Isolate and secure power against unauthorised access.
 - 4.4 Report, tag out, isolate and record damages and defects.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLHS3001A Licence to operate a personnel and materials hoist.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLHS3001 Licence to operate a personnel and materials hoist

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLHS3001A Licence to operate a personnel and materials hoist. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by operating a personnel and materials hoist, and conducting three lifts carrying loads of different weights. The hoist must be stopped at three different levels, including at least one floor.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs), and equipment service and maintenance records and checklists
- perform all activities in compliance with safe work practices and workplace-specific procedures and policies
- check, use, maintain and store equipment in compliance with manufacturer requirements
- identify hazards and use appropriate risk controls and safety measures and equipment
- calculate load weights and confirm that they are within the capacity of the hoist
- check and use safety devices
- move load
- implement shut-down procedures.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for operating a personnel and materials hoist crane under Australian Standards, and Commonwealth and state or territory work health and safety (WHS) legislation and codes of practice
- workplace information, including legislative requirements covered by:
 - SWMSs
 - safety data sheets (SDSs)
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records

- manufacturer specifications and manuals
- workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in hoist operations:
 - ground instability
 - obstructions
 - impact of other tasks being performed in the workplace
 - other plant
 - hoist overload
 - hazardous chemicals and dangerous goods
 - electrical hazards
 - insufficient lighting
 - hazardous manual tasks
 - damaged or poor-quality equipment
 - pedestrian traffic
 - wind and other adverse weather conditions
 - falling objects
 - falls from heights
- risk controls and equipment:
 - firefighting equipment
 - safety tags on electrical switches and isolators
 - traffic barricades and controls
 - pedestrian barricades and controls
 - hoist safety devices, including:
 - hoist safety gates and guards
 - hoist safety interlocks
 - adequate illumination
- testing and tagging requirements and electrical hazards associated with power supply for hoists
- processes to prevent interference to and from radio equipment being used near a personnel and materials hoist
- PPE:
 - hard hat
 - safety boots

- gloves
- high-visibility clothing
- breathing, hearing, sight, skin and sun protection
- relevant persons:
 - other hoist operators
 - riggers
 - maintenance personnel
 - supervisors
- communication equipment:
 - two-way radios
 - intercoms
 - bells
 - lights
- pre-start operational checks to ensure:
 - safe access and egress, including ground conditions
 - security and safe distance between tower ties
 - earth leakage protection of power supply
 - power leads are secured above ground level and not attached to scaffolds or building structure
 - tower guides are clean and free of rust and damage
 - signage is clearly displayed and legible
 - brakes and drive mechanism are in good working order
 - overhead protection
 - intercom and signalling systems are in good working order
 - barriers, fencing and gates are in place
 - lubrication has been applied where required
 - hoist rope, where used, is safe
 - sheaves and anchorage points are accessible
 - obstructions have been removed
 - loose gear and equipment have been removed
- processes for determining the weight of the load from labels, markings and load paperwork
- processes for identifying and interpreting the working load limit (WLL) of hoists
- routine problems encountered in the operation of a hoist, and inspection techniques and adjustments required for correction
- processes for responding to unplanned and unsafe situations, including equipment failure or loss of control and adverse weather conditions
- emergency and evacuation procedures, including fire procedures
- shut-down procedures:
 - position platform at designated parking level
 - isolate power from control panel

- isolate and secure mains power supply
- remove key from control panel
- secure landing gates to prevent unauthorised access
- secure fencing and barriers around base to prevent unauthorised access
- hoist characteristics, capabilities and operation to suit loads of different shapes, sizes and weights.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace.

Candidates must have access to:

- all personnel and equipment required to perform the tasks specified in the Performance Evidence
- a personnel and materials hoist capable of carrying loads of different weights and able to be stopped at three different levels, including at least one floor
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - incident reports
 - workplace procedures, including SWMSs, SDSs and emergency plans
 - equipment manuals and manufacturer specifications
 - relevant plant supplier information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLHS3002 Licence to operate a materials hoist

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLHS3002A Licence to operate a materials hoist. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely operate a materials hoist, that is, a hoist consisting of a car, bucket or platform cantilevered from and travelling up and down the external face of the support of a structure, which is used for hoisting goods and materials but not persons.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

Nil.

Unit Sector

Licensing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan task.

1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information.

1.2 Obtain and interpret information, including safe work

- method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements.
- 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements.
 - 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment.
 - 1.5 Calculate load weight, check that it is within the working load limit (WLL) of the hoist and distribute it in accordance with manufacturer requirements.
 - 1.6 Establish required communication methods with relevant persons.
 - 1.7 Review emergency procedures in consultation with relevant persons.
- 2 Select and prepare equipment.
- 2.1 Put risk controls and safety measures and equipment in place in consultation with relevant persons.
 - 2.2 Access hoist safely.
 - 2.3 Visually check hoist for damage and defects.
 - 2.4 Carry out pre-start checks, including checking the hoist logbook and controls.
 - 2.5 Carry out operational checks, including testing hoist safety devices and checking for fire extinguisher and other emergency equipment.
 - 2.6 Ensure hoist is operating correctly and is free of obstructions.
 - 2.7 Check communication equipment, lighting and alarm systems to make sure they are working and fit for use.
 - 2.8 Conduct test run of hoist, check for abnormal noises and shut down, tag and report identified abnormalities as required.
 - 2.9 Isolate, report, tag out and record defective equipment.

- | | | | |
|---|-----------------------------|-----|--|
| 3 | Conduct hoist operations. | 3.1 | Maintain communication with relevant persons during hoist operations and emergency situations. |
| | | 3.2 | Operate loaded hoist in accordance with manufacturer requirements. |
| | | 3.3 | Use and interpret communication signals. |
| | | 3.4 | Conduct emergency lowering in accordance with manufacturer requirements. |
| 4 | Shut down and secure hoist. | 4.1 | Shut down hoist in accordance with manufacturer requirements. |
| | | 4.2 | Carry out shut-down checks. |
| | | 4.3 | Isolate and secure power against unauthorised access. |
| | | 4.4 | Report, tag out, isolate and record damages and defects. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLHS3002A Licence to operate a materials hoist.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLHS3002 Licence to operate a materials hoist

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLHS3002A Licence to operate a materials hoist. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by operating a materials hoist and conducting three lifts carrying loads of different weights. The hoist must be stopped at three different levels, including at least one floor.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs) and equipment service and maintenance records and checklists
- perform all activities in compliance with safe work practices and workplace-specific procedures and policies
- check, use, maintain and store equipment in compliance with manufacturer requirements
- identify hazards and use appropriate risk controls and safety measures and equipment
- calculate load weights and confirm that they are within the capacity of the hoist
- check and use safety devices
- move load
- implement shut-down procedures.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for operating a materials hoist crane under Australian Standards, and Commonwealth and state or territory work health and safety (WHS) legislation and codes of practice
- workplace information, including legislative requirements covered by:
 - SWMSs
 - safety data sheets (SDSs)
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records

- manufacturer specifications and manuals
- workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in hoist operations:
 - ground instability
 - obstructions
 - impact of other tasks being performed in the workplace
 - other plant
 - hoist overload
 - hazardous chemicals and dangerous goods
 - electrical hazards
 - insufficient lighting
 - hazardous manual tasks
 - damaged or poor-quality equipment
 - pedestrian traffic
 - wind and other adverse weather conditions
 - falling objects
 - falls from heights
- risk controls and equipment:
 - firefighting equipment
 - safety tags on electrical switches and isolators
 - traffic barricades and controls
 - pedestrian barricades and controls
 - hoist safety devices:
 - hoist safety gates and guards
 - hoist safety interlocks
 - adequate illumination
- testing and tagging requirements, and electrical hazards associated with power supply for hoists
- processes to prevent interference to and from radio equipment being used near a materials hoist
- PPE:
 - hard hat
 - safety boots

- gloves
- high-visibility clothing
- breathing, hearing, sight, skin and sun protection
- relevant persons:
 - other hoist operators
 - riggers
 - maintenance personnel
 - supervisors
- communication equipment:
 - two-way radios
 - intercoms
 - bells
 - lights
- pre-start operational checks to ensure:
 - safe access and egress, including ground conditions
 - security and safe distance between tower ties
 - earth leakage protection of power supply
 - power leads are secured above ground level and not attached to scaffolds or building structure
 - tower guides are clean and free of rust and damage
 - signage is clearly displayed and legible
 - brakes and drive mechanism are in good working order
 - overhead protection
 - intercom and signalling systems are in good working order
 - barriers, fencing and gates are in place
 - lubrication has been applied where required
 - hoist rope, where used, is safe
 - sheaves and anchorage points are accessible
 - obstructions have been removed
 - loose gear and equipment have been removed
- processes for determining the weight of the load from labels, markings and load paperwork
- processes for identifying and interpreting the working load limit (WLL) of hoists
- routine problems encountered in the operation of a hoist, and inspection techniques and adjustments required for correction
- processes for responding to unplanned and unsafe situations, including equipment failure or loss of control and adverse weather conditions
- emergency and evacuation procedures, including fire procedures
- shut-down procedures:
 - position platform at designated parking level
 - isolate power from control panel

- isolate and secure mains power supply
- remove key from control panel
- secure landing gates to prevent unauthorised access
- secure fencing and barriers around base to prevent unauthorised access
- hoist characteristics, capabilities and operation to suit loads of different shapes, sizes and weights.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace.

Candidates must have access to:

- a materials hoist capable of carrying loads of different weights and able to be stopped at three different levels, including at least one floor
- all personnel and equipment required to perform the tasks specified in the Performance Evidence
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - incident reports
 - workplace procedures, including SWMSs, SDS and emergency plans
 - equipment manuals and manufacturer specifications
 - relevant plant supplier information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLRG3001 Licence to perform rigging basic level

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLRG3001A Licence to perform rigging basic level. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely perform basic rigging work.

Riggers use mechanical load shifting equipment and associated gear to move, place or secure loads, including plant, equipment or members of a structure. Riggers ensure the stability of those members and set up and dismantle hoists.

This unit applies to rigging work involving:

- structural steel erection
- hoists
- pre-cast concrete members of a structure
- safety nets and static lines
- mast climbing work platforms
- perimeter safety screens and shutters
- cantilevered crane loading platforms.

Rigging work is undertaken in construction and other industries where load shifting equipment is used to move, place or secure loads.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

CPCCLDG3001 Licence to perform dogging

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|--|
| 1 Plan task. | 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information. |
| | 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements. |
| | 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements. |
| | 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment, including signs and barricades, personal protective equipment (PPE), and fall prevention and fall arrest equipment. |
| | 1.5 Identify methods of moving and placing tools, equipment and materials to minimise the risk of falling objects, to avoid inappropriate carrying on ladders and to minimise hazardous manual tasks. |
| | 1.6 Identify required rigging equipment and associated gear. |
| | 1.7 Calculate loads associated with mechanical load shifting equipment and associated gear required to erect and dismantle structures and plant. |
| | 1.8 Establish required communication methods with relevant persons. |
| 2 Select and inspect equipment. | 2.1 Select risk controls and equipment, including fall prevention and fall arrest equipment, and check that it is working and fit for purpose. |
| | 2.2 Select and check PPE. |

- 2.3 Select rigging equipment and associated gear, inspect for defects, and isolate, tag out, report and record defective items.
 - 2.4 Select communication equipment and check that it is working and fit for use.
- 3 Set up task.
 - 3.1 Establish and maintain communication with relevant persons to ensure task plan and risk controls are communicated clearly, including any impact on other workplace activities.
 - 3.2 Ensure risk controls and safety measures and equipment have been put in place, including the fitting, adjusting and anchoring of fall protection equipment.
 - 3.3 Consult with relevant persons to ensure that ground and foundation have been assessed as suitable for task.
 - 3.4 Consult with relevant persons to ensure that the structure has been assessed as suitable for load bearing task.
- 4 Undertake basic rigging activities.
 - 4.1 Erect and dismantle all structures and plant while maintaining stability, in accordance with workplace and manufacturer requirements.
 - 4.2 Erect structural steel.
 - 4.3 Erect pre-cast concrete members of a structure, or lift and install a series of scenery panels.
 - 4.4 Erect and dismantle a safety net and static line.
 - 4.5 Erect and dismantle a hoist or mast climbing work platform.
 - 4.6 Install and dismantle a perimeter safety screen or shutter.
 - 4.7 Install and dismantle a cantilevered crane loading platform.
- 5 Complete task.
 - 5.1 Remove excess materials from work area.
 - 5.2 Inspect structures, plant, equipment and gear for defects,

and isolate, tag out and report defective items.

- 5.3 Store plant, equipment and gear in accordance with workplace requirements.
- 5.4 Remove risk controls and safety measures and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLRG3001A Licence to perform rigging basic level.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLRG3001 Licence to perform rigging basic level

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLRG3001A Licence to perform rigging basic level. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by safely performing rigging tasks at a basic level, including:

- erecting and dismantling a portal frame of structural steel consisting of columns (150 UC 29.8 kg/m), beams (minimum 200 UB 29.8 kg/m) and braces in accordance with engineering detail. It must include:
 - appropriate structural bolts, nuts, washers, purlins and girts
 - beams installed at a height of at least 4 m
 - suitable access and working platform (e.g. elevated work platform, mobile scaffold, scissor lift, portable industrial grade ladder)

It must be packed and plumbed and include temporary bracing during erection and dismantling. Hand tools and working at height safety equipment, including harness, lanyard and inertia reel, must be used

- installing and removing a series of three retaining wall panels, each panel being not less than 4 m high by 2 m wide and not less than 1.5 tonnes. One panel must be set at a 90-degree angle to one of the other panels - candidates must identify any defective lifting equipment
- installing and removing a safety (catch) net with minimum dimensions of 3 m x 4 m in accordance with manufacturer specification and engineering detail on portal frame - candidates must identify any defective nets
- installing, using and removing a static line at least 2.1 m above the beams on portal frame, in accordance with manufacturer specifications and engineering detail – candidates must identify any defective static lines and associated equipment
- installing and removing a cantilevered materials hoist (1 or 2 barrow) or a mast climbing work platform of at least three mast sections and tied in accordance with specifications
- installing and dismantling a perimeter safety screen or shutter of at least 4 m x 2 m in accordance with manufacturer specifications and engineering detail
- installing and dismantling a cantilevered crane loading platform at a height of at least 4 m with secure gates and handrails in accordance with manufacturer specifications and engineering detail

- setting up and operating a powered winch to move a load of at least 1 tonne
- using the following splice and hitch techniques:
 - eye splice
 - becket hitch.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs) and equipment service and maintenance records and checklists
- perform all activities in compliance with workplace-specific, safe work and manufacturer requirements
- use the following associated gear:
 - beam clamps or pipe clamps or plate clamps
 - tag lines
 - flexible steel wire rope (FSWR)
 - chains
 - wire and synthetic slings
 - shackles
 - wedge sockets
 - eye bolts
 - rope grips
 - turnbuckles
 - chain blocks
 - sheave blocks
 - spreader bars or lifting beam
 - levers/podgers
 - skates/rollers
 - wedges
 - props
 - powered winches
 - snatch blocks
 - wire rope winches
 - lever pull (e.g. come-alongs)
- identify hazards and use appropriate risk controls and safety measures and equipment
- safely erect and dismantle structures and plant.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for rigging under Australian Standards and Commonwealth and state or territory work health and safety (WHS) legislation, regulations, standards and codes of practice
- workplace information, including legislative requirements covered by:

- SWMSs
- permits and certifications
- information about equipment:
 - service and maintenance checklists and records
 - manufacturer and supplier specifications and manuals
- workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in rigging basic level:
 - instability of work areas
 - damaged or poor-quality equipment
 - overhead and underground hazards
 - electrical items
 - mobile plant
 - insufficient lighting
 - wind and other adverse weather conditions
 - traffic
 - pedestrian traffic
 - hazardous manual tasks
 - falling objects
 - falls from heights
- minimum clearance distance from powerlines or electrical equipment specific to mobile plant and scaffolding and other structures as determined by relevant state or territory authority or electrical supply authority
- risk controls and equipment:
 - traffic control
 - pedestrian barricades
 - PPE
 - adequate illumination
 - safety structures and screens
- inspection, handling and storage of rigging structures and equipment, associated gear, and other required equipment:
 - rigging structures and equipment:
 - elevated work platforms
 - cantilevered crane loading platforms

- portal frames
- hoists
- pre-cast concrete members
- mast climbing work platform
- safety screens and shutters
- safety nets
- associated gear:
 - power and manually operated lifting gear
 - lifting clutches
 - tag lines
 - FSWR
 - chains
 - wire and synthetic slings
 - shackles
 - terminations
 - wedge sockets
 - eye bolts
 - beam clamps
 - pipe clamps
 - plate clamps
 - rope grips
 - turnbuckles
 - chain blocks
 - lever blocks
 - lever-action winches
 - sheaves
 - spreader bars
 - lifting beams
 - jacks
 - levers
 - skates
 - wedges
 - rollers
 - beam trolley
 - props
- safety equipment:
 - full-body safety harness
 - energy absorber
 - lanyard
 - inertia reel (fall arrester)

- static safety lines
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight, skin and sun protection
- communication equipment:
 - two-way radios
 - whistles
- relevant persons:
 - doggers
 - riggers
 - crane operators
 - engineers
 - supervisors
- ground and foundation suitability:
 - rough, uneven ground
 - backfilled ground
 - soft soils
 - hard compacted soil
 - rock
 - bitumen
 - concrete
 - suspended concrete floors
 - building roofs
 - landings
 - ground bearing pressure
- mathematical processes for estimating and measuring loads for basic rigging
- techniques for making temporary connections.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace
- participation of the candidate in activities within a team of three to five members.

Candidates must have access to:

- all personnel and equipment required to perform the tasks specified in the Performance Evidence
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - incident reports
 - workplace procedures, including SWMSs and emergency plans
 - equipment manuals and manufacturer specifications
 - relevant plant supplier information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLRG3002 Licence to perform rigging intermediate level

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLRG3002A Licence to perform rigging intermediate level. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely perform intermediate rigging work.

Riggers use mechanical load shifting equipment and associated gear to move, place or secure loads, including plant, equipment or members of a building or structure. Riggers ensure the stability of those members and set up and dismantle cranes and hoists.

This unit includes rigging work involving:

- hoists with jibs and self-climbing hoists
- cranes, conveyors, dredges and excavators
- tilt slabs
- demolition of structures or plant
- multiple lifts.

Rigging work is undertaken in construction and other industries where load shifting equipment is used to move, place or secure loads.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

CPCCLRG3001 Licence to perform rigging basic level

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|--|
| 1 Plan task. | 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information. |
| | 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements. |
| | 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements. |
| | 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment, including signs and barricades, personal protective equipment (PPE), and fall prevention and fall arrest equipment. |
| | 1.5 Identify methods of moving and placing tools, equipment and materials to minimise the risk of falling objects, to avoid inappropriate carrying on ladders and to minimise hazardous manual tasks. |
| | 1.6 Identify required rigging equipment and associated gear. |
| | 1.7 Calculate loads associated with mechanical load shifting equipment and associated gear required to erect and dismantle structures and plant. |
| | 1.8 Establish required communication methods with relevant persons. |
| 2 Select and inspect equipment. | 2.1 Select risk controls and equipment, including fall prevention and fall arrest equipment, and check that it is working and fit for purpose. |
| | 2.2 Select and check PPE. |
| | 2.3 Select rigging equipment and associated gear, inspect for defects, and isolate, tag out, report and record defective items. |

- 2.4 Select communication equipment and check that it is working and fit for use.
- 3 Set up task.
 - 3.1 Establish and maintain communication with relevant persons to ensure task plan and risk controls are communicated clearly, including any impact on other workplace activities.
 - 3.2 Ensure risk controls and safety measures and equipment have been put in place, including the fitting, adjusting and anchoring of fall protection equipment.
 - 3.3 Consult with relevant persons to ensure that ground and foundation have been assessed as suitable for task.
 - 3.4 Consult with relevant persons to ensure that the structure has been assessed as suitable for load bearing task.
- 4 Undertake intermediate rigging activities.
 - 4.1 Erect and dismantle all structures and operate plant while maintaining stability, in accordance with workplace and manufacturer requirements.
 - 4.2 Conduct a multiple-crane lift.
 - 4.3 Erect and dismantle a tower crane section or a crane lattice boom section.
 - 4.4 Lift and install a series of tilt-up concrete panels.
 - 4.5 Remove a concrete-encased structural steel column and beam.
- 5 Complete task.
 - 5.1 Remove excess materials from work area.
 - 5.2 Inspect structures, plant, equipment and gear for defects, and isolate, tag out and report defective items.
 - 5.3 Store plant, equipment and gear in accordance with workplace requirements.
 - 5.4 Remove risk controls and safety measures and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLRG3002A Licence to perform rigging intermediate level.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLRG3002 Licence to perform rigging intermediate level

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLRG3002A Licence to perform rigging intermediate level. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by safely performing rigging tasks at an intermediate level, including:

- undertaking a multiple-crane lift of a load of at least 1 tonne and at least 4 m long
- one of the following:
 - adding and removing a tower crane section, or
 - adding and removing a crane lattice boom section, or
 - adding and removing a fly jib on a slewing mobile crane, or
 - erecting and dismantling a non-guyed tower
- installing and removing a three-panel structure, with each panel being at least 4 m high, at least 2 m wide and at least 1.5 tonnes
- using the following bends and hitches:
 - round turn
 - two half-hitches.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs) and equipment service and maintenance records and checklists
- perform all activities in compliance with workplace-specific, safe work and manufacturer requirements
- identify hazards and use appropriate risk controls and safety measures and equipment
- use the following associated gear:
 - tag lines
 - flexible steel wire rope (FSWR)
 - chains
 - wire and synthetic slings
 - shackles
 - wedge sockets

- eye bolts
- rope grips
- turnbuckles
- chain blocks
- sheaves
- spreader bars or lifting beams
- snatch blocks
- lifting clutches
- safely erect and dismantle structures and plant.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for rigging under Australian Standards, and Commonwealth and state or territory work health and safety (WHS) legislation, regulations, standards and codes of practice
- workplace information, including legislative requirements covered by:
 - SWMSs
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records
 - manufacturer and supplier specifications and manuals
 - workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in rigging intermediate level:
 - instability of work areas
 - damaged or poor-quality equipment
 - overhead and underground hazards
 - electrical items
 - mobile plant
 - insufficient lighting
 - wind and other adverse weather conditions
 - traffic
 - pedestrian traffic

- hazardous manual tasks
- falling objects
- falls from heights
- minimum clearance distance from powerlines or electrical equipment specific to mobile plant and scaffolding as determined by relevant state or territory authority or electrical supply authority
- risk controls and equipment:
 - traffic barricades and control
 - pedestrian barricades
 - PPE
 - adequate illumination
 - safety structures and screens
 - exclusion zones
- inspection, handling and storage of rigging structures and equipment, associated gear, and other required equipment:
 - rigging structures and equipment:
 - concrete tilt-up panels
 - non-guyed light towers
 - scaffolds
 - elevated work platforms
 - personnel box
 - cantilevered crane loading platforms
 - mast climbers
 - safety screens and shutters
 - cranes
 - associated gear:
 - power and manually operated lifting gear
 - lifting clutches
 - snatch blocks
 - tag lines
 - FSWR
 - chains
 - wire and synthetic slings
 - shackles
 - terminations
 - wedge sockets
 - eye bolts
 - beam clamps
 - pipe clamps
 - plate clamps

- wire rope grips
- turnbuckles
- rigging screws
- chain blocks
- lever blocks
- lever-action winches
- sheaves
- spreader bars
- lifting beams
- jacks
- levers
- skates
- wedges
- rollers
- beam trolley
- safety equipment:
 - safety harness
 - energy absorber
 - lanyard
 - inertia reel
 - static safety lines
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight, skin and sun protection
- communication equipment:
 - two-way radios
 - whistles
- relevant persons:
 - doggers
 - riggers
 - load-shifting plant operators
 - engineers
 - supervisors
- ground and foundation suitability:
 - rough, uneven ground
 - backfilled ground
 - soft soils

- hard compacted soil
- rock
- bitumen
- concrete
- suspended concrete floors
- building roofs
- landings
- ground bearing pressure
- mathematical processes for estimating and measuring forces and loads for intermediate rigging
- techniques for making temporary connections by tying bends and hitches:
 - round turn
 - two half-hitches.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace
- participation of the candidate in activities within a team of three to five members.

Candidates must have access to:

- all personnel and equipment required to perform the tasks specified in the Performance Evidence
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - incident reports
 - workplace procedures, including SWMSs and emergency plans
 - equipment manuals and manufacturer specifications
 - relevant plant supplier information.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLRG4001 Licence to perform rigging advanced level

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLRG4001A Licence to perform rigging advanced level. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely perform advanced rigging work.

Riggers use mechanical load shifting equipment and associated gear to move, place or secure loads, including plant, equipment or members of a building or structure. Riggers ensure the stability of those members and set up and dismantle cranes and hoists.

This unit applies to rigging work involving:

- gin poles and shear legs
- flying foxes and cable ways
- guyed derricks and structures
- suspended scaffolds and fabricated hung scaffolds.

Rigging work is undertaken in construction and other industries where load shifting equipment is used to move, place or secure loads.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

CPCCLRG3002 Licence to perform rigging intermediate level

Unit Sector

Licensing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|--|
| 1 Plan task. | 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information. |
| | 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements. |
| | 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements. |
| | 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment, including signs and barricades, personal protective equipment (PPE), and fall prevention and fall arrest equipment. |
| | 1.5 Identify methods of moving and placing tools, equipment and materials to minimise the risk of falling objects, to avoid inappropriate carrying on ladders and to minimise hazardous manual tasks. |
| | 1.6 Identify required rigging equipment and associated gear. |
| | 1.7 Calculate loads associated with mechanical load shifting equipment and associated gear required to erect and dismantle structures and plant. |
| | 1.8 Establish communication methods with associated personnel. |
| 2 Select and inspect equipment. | 2.1 Select risk controls and equipment, including fall prevention and fall arrest equipment, and check that it is working and fit for purpose. |
| | 2.2 Select and check PPE. |
| | 2.3 Select rigging equipment and associated gear, inspect for defects, and isolate, tag out, report and record defective items. |

- 2.4 Select communication equipment and check that it is working and fit for use.
- 3 Set up task.
 - 3.1 Establish and maintain communication with relevant persons to ensure task plan and risk controls are communicated clearly, including any impact on other workplace activities.
 - 3.2 Ensure risk controls and safety measures and equipment have been put in place, including the fitting, adjusting and anchoring of fall protection equipment.
 - 3.3 Consult with relevant persons to ensure that ground and foundation have been assessed as suitable for task.
 - 3.4 Consult with relevant persons to ensure that the structure has been assessed as suitable for load bearing task.
- 4 Undertake advanced rigging activities.
 - 4.1 Erect, operate and dismantle all structures and plant while maintaining stability, in accordance with workplace and manufacturer requirements.
 - 4.2 Erect gin poles or sheer legs, operate winch to move load, and dismantle.
 - 4.3 Erect flying fox or cable way, operate to move a load, and dismantle.
 - 4.4 Erect guyed derrick, operate to move a load, and dismantle.
 - 4.5 Erect, operate and dismantle suspended scaffold.
 - 4.6 Install and remove fabricated hung scaffold.
- 5 Complete task.
 - 5.1 Remove excess materials from work area.
 - 5.2 Inspect structures, plant, equipment and gear for defects, and isolate, tag out and report defective items.
 - 5.3 Store plant, equipment and gear in accordance with workplace requirements.
 - 5.4 Remove risk controls safety measures and equipment.

- 5.5 Complete handover certificates, and attach scaffolding tags for suspended scaffold and hung scaffold.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLRG4001A Licence to perform rigging advanced level.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLRG4001 Licence to perform rigging advanced level

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLRG4001A Licence to perform rigging advanced level. Updated to meet the Standards for Training Packages 2012

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by erecting, using and dismantling the following:

- gin pole or shear leg of a height of 8 m or more and a working load limit of 400 kg or more. The winch must be powered with at least one diversion sheave
- a flying fox or cable way of a height of at least 4 m and a span distance of at least 10 m and able to support at least 200 kg - the rope span may be supported from fixed anchorages, poles, or both
- guyed derricks and structures of a minimum height of 8 m
- a suspended scaffold of a height of at least 4 m with a minimum capacity of at least 200 kg attached by a dual needle system using counterweights and powered winch
- a fabricated hung scaffold of at least 4 m height and 3.4 m length, and consisting of one continuous platform of heavy-duty capacity.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs) and equipment service and maintenance records and checklists
- perform all activities in compliance with workplace-specific, safe work and manufacturer requirements, including the completion of required handover certificates
- identify hazards and use appropriate risk controls and safety measures and equipment
- use all the associated gear listed under Knowledge Evidence
- safely erect, use and dismantle structures and plant.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for rigging under Australian Standards, and Commonwealth and state or territory work health and safety (WHS) legislation, regulations and codes of practice
- workplace information, including legislative requirements covered by:

- SWMSs
- permits and certifications
- information about equipment:
 - service and maintenance checklists and records
 - manufacturer and supplier specifications and manuals
- workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in rigging advanced level:
 - instability of work areas
 - damaged or poor-quality equipment
 - overhead and underground hazards
 - electrical items
 - mobile plant
 - insufficient lighting
 - wind and other adverse weather conditions
 - traffic
 - pedestrian traffic
 - hazardous manual tasks
 - falling objects
 - falls from heights
- minimum clearance distance from powerlines or electrical equipment specific to mobile plant and scaffolding as determined by relevant state or territory authority or electrical supply authority
- risk controls and equipment:
 - traffic barricades and control
 - pedestrian barricades
 - PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight, skin and sun protection
 - adequate illumination
 - safety structures and screens

- inspection, handling and storage of rigging structures and equipment, associated gear, and other required equipment:
 - rigging structures and equipment:
 - gin poles
 - flying foxes
 - shear legs
 - cable ways
 - guyed derricks
 - suspended scaffolds
 - fabricated hung scaffolds
 - associated gear:
 - power and manually operated lifting gear
 - tag lines
 - flexible steel wire rope (FSWR)
 - chains
 - wire and synthetic slings
 - shackles
 - terminations
 - eye bolts
 - beam clamps
 - rope grips
 - turnbuckles
 - rigging screws
 - lever blocks
 - lever-action winches
 - sheaves
 - scaffold and rigging tools
 - jacks
 - levers
 - skates
 - wedges
 - rollers
 - girder trolley
 - safety equipment:
 - safety harness
 - energy absorber
 - lanyard
 - inertia reel
 - static safety lines
 - communication equipment:

- two-way radios
- whistles
- associated personnel:
 - doggers
 - riggers
 - crane operators
 - engineers
 - supervisors
- ground and foundation suitability:
 - rough, uneven ground
 - backfilled ground
 - soft soils
 - hard compacted soil
 - rock
 - bitumen
 - concrete
 - suspended concrete floors
 - building roofs
 - landings
 - ground bearing pressure
- supporting beams or structures load bearing capacity
- mathematical processes for calculating loads for advanced rigging.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace.
- participation of the candidate in activities within a team of three to five members.

Candidates must have access to:

- all personnel and equipment required to perform the tasks specified in the Performance Evidence
- workplace information and records, including:

- equipment and maintenance checklists
- record system for service and maintenance history
- incident reports
- workplace procedures, including SWMSs and emergency plans
- equipment manuals and manufacturer specifications
- relevant plant supplier information.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLSF2001 Licence to erect, alter and dismantle scaffolding basic level

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCLSF2001A Licence to erect, alter and dismantle scaffolding basic level. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely perform basic scaffolding work.

Scaffolding work involves erecting, altering or dismantling a temporary structure to support a platform from which a person or object could fall more than four metres.

This unit applies to scaffolding work involving:

- modular or pre-fabricated scaffolds
- cantilevered materials hoists with a maximum working load of 500 kg
- ropes
- gin wheels
- safety nets and static lines
- bracket scaffolds (tank and formwork).

Scaffolding work is undertaken in construction and other industries where temporary structures are erected, altered and dismantled.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

Nil.

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|----------------------|--|
| 1 Plan task. | 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information. |
| | 1.2 Obtain and read information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements. |
| | 1.3 Obtain and read information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements. |
| | 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment, including signs and barricades, personal protective equipment (PPE), and fall prevention and fall arrest equipment. |
| | 1.5 Identify methods of moving and placing tools, equipment and materials to minimise the risk of falling objects, to avoid inappropriate carrying on ladders and to minimise hazardous manual tasks. |
| | 1.6 Identify required scaffold and associated equipment. |
| | 1.7 Calculate loads exerted on and by the scaffold and scaffolding equipment. |
| | 1.8 Establish required communication methods with relevant persons. |
| 2 Select and inspect | 2.1 Select risk controls and equipment and fall protection, |

- plant and equipment. and check that it is working and fit for purpose.
- 2.2 Select and check PPE.
 - 2.3 Inspect scaffold and associated equipment for defects, and isolate, tag out, report and record defective items.
 - 2.4 Select communication equipment and check that it is working and fit for use.
- 3 Set up task.
- 3.1 Establish and maintain communication with relevant persons to ensure task plan and risk controls are communicated clearly, including any impact on other workplace activities.
 - 3.2 Ensure risk controls and safety measures and equipment have been put in place, including the fitting, adjusting and anchoring of fall protection equipment.
 - 3.3 Consult with relevant persons to ensure that ground and foundation have been assessed as suitable for task.
 - 3.4 Prepare footings to support scaffold and scaffold equipment.
 - 3.5 Prepare scaffold and scaffold equipment, and place in a stable position ready for erection.
- 4 Undertake basic scaffolding activities.
- 4.1 Erect and dismantle scaffold and equipment while maintaining stability, in accordance with workplace and manufacturer requirements.
 - 4.2 Erect and dismantle modular or pre-fabricated scaffold.
 - 4.3 Erect and dismantle cantilevered materials hoists.
 - 4.4 Apply methods for making temporary connections using fibre ropes.
 - 4.5 Erect, operate and dismantle gin wheels.
 - 4.6 Erect and dismantle safety nets and static lines.
 - 4.7 Erect and dismantle bracket scaffolds (tank and formwork).

- 5 Complete task.
 - 5.1 Remove excess materials from work area.
 - 5.2 Inspect completed scaffolding task for compliance with task requirements, complete handover certificate and forward to relevant persons, and complete and attach scaffold tag.
 - 5.3 Inspect all plant and equipment for defects, and isolate, tag out and report defective items.
 - 5.4 Store all plant and equipment in accordance with workplace requirements.
 - 5.5 Remove risk controls and safety measures and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLSF2001A Licence to erect, alter and dismantle scaffolding basic level.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLSF2001 Licence to erect, alter and dismantle scaffolding basic level

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCLSF2001A Licence to erect, alter and dismantle scaffolding basic level. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by erecting, altering and dismantling the following:

- a modular scaffold of a minimum of three bays with a return (tied in), ladder and stair access, bay extension platform (hop-up brackets) incorporating a safety screen and a platform height of more than 4 m
- a bracket scaffold (including tank, formwork and top-plate hung bracket)
- a mobile scaffold of above 4 m height
- a gin wheel
- a cantilever materials hoist with a maximum working load of 500 kg
- a safety net and static line.

The candidate must use the following bends, hitches and splices:

- short splice
- sheet bend
- clove hitch
- timber hitch.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs), and equipment service and maintenance records and checklists
- perform all activities in compliance with workplace-specific, safe work and manufacturer requirements, including the completion of any required handover certificates and scaffold tags
- identify hazards and use appropriate risk controls and safety measures and equipment

- use the following associated gear and stability equipment:
 - flexible steel wire rope (FSWR) and fittings
 - ladders
 - tie tubes and fittings
 - fibre rope
 - stairways and screening
 - tape measures
 - scaffold belts
 - hand tools
 - sole plates and boards
 - screw jacks
 - levels
 - props
 - bracing.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for scaffolding under Australian Standards, and Commonwealth and state or territory WHS legislation, regulations and codes of practice, and local government regulations
- workplace information, including legislative requirements, covered by:
 - SWMSs
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records
 - manufacturer and supplier specifications and manuals
 - workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in scaffolding activities:
 - instability of work areas
 - damaged or poor-quality equipment
 - overhead and underground hazards
 - electrical items

- mobile plant
- insufficient lighting
- wind and other adverse weather conditions
- traffic
- pedestrian traffic
- hazardous manual tasks
- falling objects
- falls from heights
- minimum clearance distance for scaffolding work from powerlines and electrical equipment as determined by the relevant state or territory authority or electrical supply authority
- risk controls and equipment:
 - establishment of safe and adequate access and egress
 - adequate illumination
 - traffic barricades and control
 - pedestrian barricades
 - safety harness
 - energy absorber
 - lanyard
 - inertia reel
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight, skin and sun protection
- application, limitation, operation, load capabilities and safety requirements of:
 - modular and prefabricated scaffolds
 - cantilevered materials hoists with a maximum working load of 500 kg
 - ropes
 - gin wheels
 - safety nets and static lines
 - bracket scaffolds (tank and formwork)
- dimensions of scaffold, maximum capacities and types of loads:
 - static loads
 - live loads
 - dead loads
 - dynamic loads
 - load capacities and minimum dimensions for light duty, medium duty, heavy duty and special duty scaffolds

- engineering and supplier specifications
- mathematical processes for estimating and measuring loads for scaffolds
- types and functions of associated equipment, including selection, inspection, care, handling, application, storage and limitations of:
 - scaffolding components and equipment
 - FSWR and fittings
 - ladders
 - tie tubes and fittings
 - fibre rope
 - stairways and screening
 - box spanners
 - spirit levels
 - tape measures
 - scaffold belts
 - podgers
 - hammers
 - wire nips
 - wrenches
 - torpedo levels
 - spanners
 - cutters
 - hammer drills
 - materials hoists
 - gin wheels
 - safety nets
 - static lines and fittings
- stability equipment and processes:
 - sole plates and boards
 - screw jacks
 - levelling
 - ties
 - bracing and propping
- relevant persons:
 - other scaffolders
 - supervisors
- ground and foundation suitability:
 - ground bearing pressure
 - rough and uneven ground
 - backfilled ground
 - soft soils

- hard compacted soil
- rock
- bitumen
- concrete
- scaffolding erection, alteration and dismantling techniques
- workplace policies and procedures for scaffolding:
 - erecting, altering and dismantling scaffolds
 - erecting and stabilising cantilever hoists and scaffolds
 - manufacturer requirements for scaffolding
 - working safely at heights
 - setting up fall prevention and fall arrest systems, including safety nets
 - understanding structural charts and structural plans.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace.
- participation of the candidate in activities within a team of three to five members.

Candidates must have access to:

- all personnel and equipment required to perform the tasks specified in the Performance Evidence
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - reporting procedures
 - workplace procedures, including SWMSs and emergency plans
 - equipment manuals and manufacturer specifications
 - relevant plant supplier information.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLSF3001 Licence to erect, alter and dismantle scaffolding intermediate level

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLSF3001A Licence to erect, alter and dismantle scaffolding intermediate level. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely perform intermediate scaffolding work.

Scaffolding work involves erecting, altering or dismantling a temporary structure to support a platform from which a person or object could fall more than four metres.

This unit applies to scaffolding work involving:

- cantilevered crane loading platforms
- cantilevered scaffolds
- spur scaffolds
- barrow ramps and sloping platforms
- scaffolding associated with perimeter safety screens and shutters
- mast climbing work platforms
- tube and coupler scaffolds (including tube and coupler covered ways and gantries).

Scaffolding work is undertaken in construction and other industries where temporary structures are erected, altered and dismantled.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

CPCCLSF2001 Licence to erect, alter and dismantle scaffolding basic level

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Plan task. | 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information. |
| | 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements. |
| | 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements. |
| | 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment, including signs and barricades, personal protective equipment (PPE), and fall prevention and fall arrest equipment. |
| | 1.5 Identify methods of moving and placing tools, equipment and materials to minimise the risk of falling objects, to avoid inappropriate carrying on ladders and to minimise hazardous manual tasks. |
| | 1.6 Identify required scaffold and associated equipment. |
| | 1.7 Calculate loads exerted on and by the scaffold and scaffolding equipment. |
| | 1.8 Establish required communication methods with relevant persons. |
| 2 Select and inspect plant and equipment. | 2.1 Select risk-control equipment, including fall prevention and fall arrest equipment, and check that it is working and fit for purpose. |
| | 2.2 Select and check PPE. |

- 2.3 Inspect scaffold and associated equipment for defects, and isolate, tag out, report and record defective items.
 - 2.4 Select communication equipment and check that it is working and fit for use.
 - 3 Set up task.
 - 3.1 Establish and maintain communication with relevant persons to ensure task plan and risk controls are communicated clearly, including any impact on other workplace activities.
 - 3.2 Ensure risk controls and safety measures and equipment have been put in place, including the fitting, adjusting and anchoring of fall protection equipment.
 - 3.3 Consult with relevant persons to ensure that ground and foundation have been assessed as suitable for task.
 - 3.4 Prepare footings to support scaffold and scaffold equipment.
 - 3.5 Prepare scaffold and scaffold equipment, and place in a stable position ready for erection.
 - 4 Undertake intermediate scaffolding activities.
 - 4.1 Erect and dismantle scaffold and equipment while maintaining stability, in accordance with workplace and manufacturer requirements.
 - 4.2 Erect and dismantle cantilevered crane loading platforms.
 - 4.3 Erect and dismantle cantilevered scaffolds.
 - 4.4 Erect and dismantle spur scaffolds.
 - 4.5 Erect and dismantle barrow ramps and sloping platforms.
 - 4.6 Erect and dismantle scaffolding associated with perimeter safety screens or shutters.
 - 4.7 Erect and dismantle mast climbing work platforms.
 - 4.8 Erect tube and coupler scaffolds, including tube and coupler covered ways and gantries.

- 5 Complete task.
 - 5.1 Remove excess materials from work area.
 - 5.2 Inspect completed scaffolding task for compliance with task requirements, complete handover certificate and forward to relevant persons, and complete and attach scaffold tag.
 - 5.3 Inspect scaffold and scaffold equipment for defects, and isolate, tag out and report defective items.
 - 5.4 Store scaffold and scaffold equipment in accordance with workplace requirements.
 - 5.5 Remove risk controls and safety measures and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLSF3001A Licence to erect, alter and dismantle scaffolding intermediate level.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLSF3001 Licence to erect, alter and dismantle scaffolding intermediate level

Modification History

- | | |
|--------------|--|
| Release
1 | This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLSF3001A Licence to erect, alter and dismantle scaffolding intermediate level. Updated to meet the Standards for Training Packages 2012. |
|--------------|--|

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by safely erecting, altering and dismantling the following:

- cantilevered and spurred scaffold
- barrow ramp or sloping platform
- tube and coupler scaffold of at least four medium duty bays long and two lifts high with a working platform of at least 4 m in height with a ladder access. It must have a cantilevered platform at the rear of the scaffold and include a ramp constructed with steel tube from the rear of the scaffold to a height of 1 m and a width of at least 675 mm, and include handrails, toe boards and mid rails; all planks must be secured
- cantilevered crane-loading platform
- mast climbing work platform.

The candidate must also produce a tube and coupler scaffold plan in accordance with Australian Standards, demonstrating the following:

- diagonal staggering of standards
- staggering of ledgers
- joints of ledgers within 300 mm of standards
- joints of standards within 300 mm of ledgers
- positioning of ledgers.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs) and equipment service and maintenance records and checklists
- perform all activities in compliance with workplace-specific requirements, safe work requirements and manufacturer requirements, including the completion of any required handover certificates and scaffold tags
- identify hazards and use appropriate risk controls and safety measures and equipment
- use the following associated gear and stability equipment:

- planks
- flexible steel wire rope (FSWR) and fittings
- ladders
- tie tubes and fittings
- fibre rope
- tape measures
- scaffold belts
- hand tools
- levels
- sole plates and boards
- screw jacks
- props
- bracing.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for scaffolding under Australian Standards, Commonwealth and state or territory work health and safety (WHS) legislation, regulations and codes of practice, and local government regulations
- workplace information, including legislative requirements covered by:
 - SWMSs
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records
 - manufacturer and supplier specifications and manuals
 - workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in scaffolding activities:
 - instability of work areas
 - damaged or poor-quality equipment
 - overhead and underground hazards
 - electrical items
 - mobile plant

- insufficient lighting
- wind and other adverse weather conditions
- traffic
- pedestrian traffic
- hazardous manual tasks
- falling objects
- falls from heights
- minimum clearance distance for scaffolding work from powerlines and electrical equipment as determined by the relevant state or territory authority or electrical supply authority
- risk controls and equipment:
 - establishment of safe and adequate access and egress
 - adequate illumination
 - traffic barricades and control
 - pedestrian barricades
 - safety harness
 - energy absorber
 - lanyard
 - inertia reel
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight and skin (sun) protection
- application, limitation, operation, load capabilities and safety requirements of:
 - cantilevered crane loading platforms
 - cantilevered scaffolds
 - spur scaffolds
 - barrow ramps and sloping platforms
 - scaffolding associated with perimeter safety screens and shutters
 - mast climbing work platforms
 - tube and coupler scaffolds, including tube and coupler covered ways and gantries
- dimensions of scaffold, maximum capacities and types of loads:
 - static loads
 - live loads
 - dead loads
 - dynamic loads
 - load capacities and minimum dimensions for light duty, medium duty, heavy duty and special duty scaffolds

- engineering and supplier specifications
- mathematical processes for estimating loads for scaffolds
- design of tube and coupler scaffolding
- types and functions of associated equipment, including selection, inspection, care, handling, application, storage and limitations of:
 - scaffolding components and equipment
 - independent adjustable props
 - mast climbers
 - safety screens and shutters
 - planks
 - FSWR and fittings
 - ladders
 - tie tubes and fittings
 - fibre rope
 - stairways and screening
 - box spanners
 - hammers
 - tape measures
 - scaffold belts
 - podgers
 - wire nips
 - wrenches
 - torpedo levels
 - shovels
 - spanners
 - cutters
 - hammer drills
- stability equipment and processes:
 - sole plates and boards
 - screw jacks
 - levelling
 - ties
 - bracing and propping
- relevant persons:
 - other scaffolders
 - doggers and riggers
 - designers and engineers
 - supervisors
- ground and foundation suitability:
 - rough and uneven ground

- backfilled ground
- soft soils
- hard compacted soil
- rock
- bitumen
- concrete
- workplace policies and procedures for scaffolding:
 - erecting, altering and dismantling scaffolds
 - manufacturer requirements for scaffolding
 - working safely at heights
 - setting up fall prevention and fall arrest systems, including safety nets
 - interpreting structural charts and structural plans.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace
- participation of the candidate in activities within a team of three to five members.

Candidates must have access to:

- all personnel and equipment required to perform the tasks specified in the Performance Evidence
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - reporting procedures
- workplace procedures, including SWMSs and emergency plans
- equipment manuals and manufacturer specifications
- relevant plant supplier information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLSF4001 Licence to erect, alter and dismantle scaffolding advanced level

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLSF4001A Licence to erect, alter and dismantle scaffolding advanced level. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely perform advanced scaffolding work.

Scaffolding work involves erecting, altering or dismantling a temporary structure to support a platform from which a person or object could fall more than four metres.

This unit applies to scaffolding work involving:

- cantilevered hoists
- hung scaffolds, including scaffolds hung from tubes, wire ropes or chains
- suspended scaffolds.

Scaffolding work is undertaken in construction and other industries where temporary structures are erected, altered and dismantled.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

CPCCLSF3001 Licence to erect, alter and dismantle scaffolding intermediate level

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Plan task. | 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information. |
| | 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements. |
| | 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements. |
| | 1.4 Identify workplace and task-specific hazards and determine required risk controls and safety measures and equipment, including signs and barricades, personal protective equipment (PPE), and fall prevention and fall arrest equipment. |
| | 1.5 Identify methods of moving and placing tools, equipment and materials to minimise the risk of falling objects, to avoid inappropriate carrying on ladders and to minimise hazardous manual tasks. |
| | 1.6 Identify required scaffold and associated equipment. |
| | 1.7 Calculate loads exerted on and by the scaffold and scaffolding equipment. |
| | 1.8 Establish required communication methods with relevant persons. |
| 2 Select and inspect plant and equipment. | 2.1 Select risk controls and equipment, including fall prevention and fall arrest equipment, and check that it is working and fit for purpose. |
| | 2.2 Select and check PPE. |

- 2.3 Inspect scaffold and associated equipment for defects, and isolate, tag out, report and record defective items.
 - 2.4 Select communication equipment and check that it is working and fit for use.
 - 3 Set up task.
 - 3.1 Establish and maintain communication with relevant persons to ensure task plan and risk controls are communicated clearly, including any impact on other workplace activities.
 - 3.2 Ensure risk controls and safety measures and equipment have been put in place, including the fitting, adjusting and anchoring of fall protection equipment.
 - 3.3 Consult with relevant persons to ensure that ground and foundation have been assessed as suitable for task.
 - 3.4 Prepare footings to support scaffold and scaffold equipment.
 - 3.5 Prepare scaffold and scaffold equipment, and place in a stable position ready for erection.
 - 4 Undertake advanced scaffolding activities.
 - 4.1 Erect and dismantle scaffold and equipment while maintaining stability, in accordance with workplace and manufacturer requirements.
 - 4.2 Erect and dismantle a cantilevered hoist.
 - 4.3 Erect and dismantle a hung scaffold that is hung from chains, flexible steel wire rope (FSWR) or tubes.
 - 4.4 Erect and dismantle a suspended scaffold attached by a dual needle system using counterweights and powered winch.
 - 5 Complete task.
 - 5.1 Remove excess materials from work area.
 - 5.2 Inspect completed scaffolding task for compliance with task requirements, complete handover certificate and forward to relevant persons, and complete and attach scaffold tag.

- 5.3 Inspect scaffold and scaffold equipment for defects, and isolate, tag out and report defective items.
- 5.4 Store scaffold and scaffold equipment in accordance with workplace requirements.
- 5.5 Remove risk controls and safety measures and equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLSF4001A Licence to erect, alter and dismantle scaffolding advanced level.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLSF4001 Licence to erect, alter and dismantle scaffolding advanced level

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLSF4001A Licence to erect, alter and dismantle scaffolding advanced level. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency of this unit, a candidate must meet the elements and performance criteria by safely erecting, altering and dismantling:

- a cantilevered hoist consisting of at least three mast sections tied in accordance with the specifications, on at least one occasion
- a tube and coupler hung scaffold of at least 4 m height and 3.6 m length and consisting of one continuous platform of heavy-duty capacity which is hung from chains, flexible steel wire rope (FSWR) or tubes
- a suspended scaffold of at least 4 m height and at least 200 kg minimum capacity attached by a dual needle system using counterweights and powered winch.

The candidate must:

- check relevant workplace information, including safe work method statements (SWMSs) and equipment service and maintenance records and checklists
- perform all activities in compliance with workplace-specific, safe work and manufacturer requirements, including the completion of any required handover certificates
- identify hazards and use appropriate risk controls and safety measures and equipment
- use the following associated gear and stability equipment:
 - counterweights
 - prefabricated needles
 - swinging stages
 - winches
 - FSWR and fittings
 - ladders
 - tie tubes and fittings

- fibre rope
- hand tools
- levels
- tape measures
- ties.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for scaffolding under Australian Standards, Commonwealth and state or territory work health and safety (WHS) legislation, regulations and codes of practice, and local government regulations
- workplace information, including legislative requirements covered by:
 - SWMSs
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records
 - manufacturer and supplier specifications and manuals
 - workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in scaffolding activities:
 - instability of work areas
 - damaged or poor-quality equipment
 - overhead and underground hazards
 - electrical items
 - mobile plant
 - insufficient lighting
 - wind and other adverse weather conditions
 - traffic
 - pedestrian traffic
 - hazardous manual tasks
 - falling objects
 - falls from heights

- minimum clearance distance for scaffolding work from powerlines and electrical equipment as determined by the relevant state or territory authority or electrical supply authority
- risk controls and equipment:
 - establishment of safe and adequate access and egress
 - adequate illumination
 - traffic barricades and control
 - pedestrian barricades
 - safety harness
 - energy absorber
 - lanyard
 - inertia reel
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight, skin and sun protection
- application, limitation, operation, load capabilities and safety requirements of:
 - cantilevered hoists
 - hung scaffolds, including scaffolds hung from tubes, wire ropes or chains
 - suspended scaffolds
- dimensions of scaffold, maximum capacities and types of loads:
 - static loads
 - live loads
 - dead loads
 - dynamic loads
 - load capacities and minimum dimensions for light duty, medium duty, heavy duty and special duty scaffolds
 - engineering and supplier specifications
- mathematical processes for estimating and measuring loads for scaffolds
- design of tube and coupler scaffolding
- types and functions of associated equipment, including selection, inspection, care, handling, application, storage and limitations of:
 - scaffold components and equipment
 - counterweights
 - prefabricated needles
 - swinging stages
 - winches
 - FSWR and fittings
 - ladders

- tie tubes and fittings
- fibre rope
- stairways and screening
- box spanners
- hammers
- spirit levels
- tape measures
- scaffold belts
- podgers
- wire nips
- wrenches
- torpedo levels
- spanners
- cutters
- hammer drills
- stability equipment and processes:
 - sole plates and boards
 - screw jacks
 - levelling
 - ties
 - bracing and propping
- relevant persons:
 - other scaffolders
 - doggers and riggers
 - engineers and designers
 - supervisors
- load bearing capacity of supporting beams or structures
- workplace policies and procedures for scaffolding:
 - erecting, altering and dismantling scaffolds and equipment
 - manufacturer requirements for scaffolding
 - working safely at heights
 - setting up fall prevention and fall arrest systems, including safety nets
 - interpreting structural charts and structural plans.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace
- participation of the candidate in activities within a team of three to five members.

Candidates must have access to:

- all personnel and equipment required to perform the tasks specified in the Performance Evidence
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - reporting procedures
 - workplace procedures, including SWMSs and emergency plans
 - equipment manuals and manufacturer specifications
 - relevant plant supplier information.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLTC4001 Licence to operate a tower crane

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLTC4001A Licence to operate a tower crane. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely operate a tower crane.

Tower crane work involves a boom crane or a jib crane (with horizontal or luffing jib) mounted on a demountable or permanent tower structure.

Self-erecting tower cranes are not included in this unit of competency.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

Nil.

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan task.
 - 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information.
 - 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements.
 - 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements.
 - 1.4 Identify workplace and task-specific hazards, including hazards associated with working at heights, and determine required risk controls and safety measures and equipment, including fall prevention and fall arrest equipment, as required.
 - 1.5 Identify methods of moving and placing tools, equipment and materials to minimise the risk of falling objects.
 - 1.6 Calculate load weight in consultation with licensed dogger.
 - 1.7 Consult with licensed dogger to confirm that load weight is within the rated capacity of the crane and the working load limit (WLL) of the lifting gear.
 - 1.8 Determine and inspect crane and load movement paths.
 - 1.9 Confirm implementation of and compliance with traffic management plan.
 - 1.10 Establish required communication methods with relevant persons.
 - 1.11 Establish and maintain communication with relevant persons to ensure lift plan and risk controls are communicated clearly, including any impact on other workplace activities.
- 2 Prepare for task.
 - 2.1 Check signs and labels to ensure visibility and legibility.
 - 2.2 Assess wind and other adverse weather conditions and determine whether their impact on the crane and loads is within the manufacturer requirements for safe operation.

- 2.3 Access crane safely.
 - 2.4 Test crane safety devices in accordance with workplace requirements.
 - 2.5 Carry out pre-start crane checks and report, record and take action on identified damage or defects, in accordance with safe work practices, workplace-specific procedures and policies, and manufacturer requirements.
 - 2.6 Check that crane logbook has been completed and signed, that it is correct for crane type and current compliance, and that any rectifications have been signed off.
 - 2.7 Start crane, carry out operational checks, check for abnormal noises, smoke or fumes and shut down, tag out, report and record identified abnormalities in accordance with safe work practices, workplace-specific procedures and policies, and manufacturer requirements.
- 3 Transfer load.
- 3.1 Position boom or jib and hook block over the load as directed by licensed dogger.
 - 3.2 Carry out test lift to allow for checks and adjustments to slinging to be made by licensed dogger.
 - 3.3 Under the direction of the licensed dogger, transfer loads using appropriate crane movements.
 - 3.4 Use radio and interpret hand and whistle signals to communicate with licensed dogger.
 - 3.5 Lower and land load, allowing lifting gear to be disconnected.
- 4 Shut down and secure crane.
- 4.1 Apply hoist, luffing, trolley and travel brakes.
 - 4.2 Shut down crane and place in weather-vane position in accordance with manufacturer requirements.
 - 4.3 Carry out routine shutdown checks, and secure crane and equipment, including cabin, against unauthorised access.
 - 4.4 Exit the crane safely.

4.5 Report and record any damage or defects.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLTC4001A Licence to operate a tower crane.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLTC4001 Licence to operate a tower crane

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLTC4001A Licence to operate a tower crane. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by safely operating from the cabin, a tower crane with a minimum tower height of 20 m and a maximum rated capacity of at least 3000 kg. The candidate must move four loads of different shapes, sizes and weights in conjunction with a licensed dogger.

For all loads, the candidate must:

- check relevant workplace information, including safe work method statements (SWMSs), and equipment service and maintenance records and checklists
- perform all activities in compliance with safe work practices and workplace-specific procedures and policies
- check, use, maintain and store equipment in compliance with manufacturer requirements
- identify hazards and implement appropriate risk controls and safety measures and equipment
- confirm that load weight is within the rated capacity of the crane
- locate and interpret signs and labels
- check and use safety devices
- lift and move loads using the main hook through an obstacle course including a 90-degree minimum slew, with the load in full view of the candidate and using all crane operational controls:
 - luffing/trolleying levers
 - hoisting and lowering levers
 - slewing levers
 - foot pedals
 - engine speed control

- use two-way radio and interpret hand and whistle signals to communicate with licensed dogger
- implement shutdown procedures.

Movements must include:

- luffing or trolleying
- slewing
- hoisting and lowering.

Loads must include:

- a load of more than 50% of the configured capacity of the crane
- stillage containing at least ten scaffolding standards or loose steel pipes of 200 kg or more that requires a licensed dogger to sling
- an uneven load that requires a licensed dogger to sling
- a round load with a minimum diameter of 300 mm and minimum length of 3 m that requires a licensed dogger to sling.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for operating a tower crane under Australian Standards, and Commonwealth and state or territory work health and safety (WHS) legislation and codes of practice
- workplace information, including legislative requirements covered by:
 - SWMSs
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records
 - manufacturer specifications and manuals
 - workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in tower crane operations:
 - overhead and underground hazards, including powerlines
 - other cranes and booms
 - other plant
 - obstructions
 - combustible substances, including fuel

- electrical hazards
- insufficient lighting
- traffic
- wind and other adverse weather conditions
- pedestrian traffic
- work required at heights
- risk controls and safety measures and equipment:
 - safety tags on electrical switches and isolators
 - insulated powerlines
 - safety observer
 - exclusion zone
 - disconnected power
 - traffic barricades and controls
 - pedestrian controls
 - movement of obstructions
 - evacuation procedures
 - adequate illumination
 - firefighting equipment, including a fire extinguisher of adequate capacity near the operator's position
 - appropriate earthing for the conditions, such as static electricity build up due to electromagnetic radiation (EMR) or wind
 - fall prevention and fall arrest equipment
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight, skin and sun protection
- hand and whistle communication signals:
 - stop
 - hoist up and down
 - luff boom up and down
 - trolley in and out
 - slew left and right
- signs and labels:
 - crane data plates and labels
 - load charts
 - crane decals
 - operational control lever labels
- tower crane safety devices:

- audible and visual devices
- aviation lights
- illumination
- motion limits
- overload limits
- anti-collision devices
- crane controls:
 - luffing levers
 - hoisting and lowering levers
 - slewing levers
 - trolleying levers
 - slew and boom brake and locks
 - foot pedals
 - emergency stop control
 - engine speed control
- crane movements:
 - luffing
 - slewing
 - hoisting and lowering
 - trolleying
- multiple crane communication systems
- processes for responding to unplanned and unsafe situations, including equipment failure or loss of control
- emergency and evacuation procedures, including fire procedures
- shutdown procedures as applicable:
 - raise boom or jib to shutdown position
 - park trolley in shutdown position
 - retract hoist rope and hook block
 - idle engine to stabilise temperature
 - turn off engine
 - place in weather vane mode
 - remove key from ignition
 - isolate electrical supply
 - isolate fuel
 - lock and secure cabin
 - lock and secure platform access hatch
- tower crane characteristics, capabilities and operation to suit loads of different shapes, sizes and weights
- use and interpretation of crane manufacturer specifications, including load charts to enable the crane to be configured within its rated capacity.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace.

Candidates must have access to:

- a cabin-operated tower crane with a minimum tower height of 20 m and a maximum rated capacity of at least 3000 kg, which is in a safe and compliant condition
- lifting and other equipment required for operating a tower crane
- risk controls and safety measures and equipment, including a fire extinguisher of adequate capacity near the operator's position
- communication equipment, including whistle and two-way radios
- loads as specified in the Performance Evidence
- licensed dogger to sling and direct loads
- workplace information and records, including:
 - record system for service and maintenance history
 - incident reports
 - workplace procedures, including emergency plans
 - equipment manuals and manufacturer specifications.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLTC4002 Licence to operate a self-erecting tower crane

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Missing text in Element and Performance Criteria Point 2 corrected.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLTC4002A Licence to operate a self-erecting tower crane. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely operate a self-erecting tower crane.

Self-erecting cranes are common on small to medium-sized construction sites. They usually have a horizontal boom that folds out during erection and are usually operated by remote control rather than from a cabin. For licencing purposes, self-erecting tower cranes are a separate category to other types of tower crane.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Competence in this unit does not in itself result in a licence. A licence is obtained after competence is assessed under applicable Commonwealth, state or territory work health and safety (WHS) regulations.

Pre-requisite Unit

Nil.

Unit Sector

Licencing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan task. | 1.1 Review task instructions, consult with relevant persons to seek clarification as required, and obtain relevant workplace information. |
| | 1.2 Obtain and interpret information, including safe work method statements (SWMSs), required to ensure that activities are performed in compliance with workplace-specific and safe work requirements. |
| | 1.3 Obtain and interpret information required to ensure that equipment inspection, use, maintenance and storage complies with manufacturer requirements. |
| | 1.4 Identify workplace and task-specific hazards, including, where relevant, hazards associated with working at heights, and determine required risk controls and safety measures and equipment. |
| | 1.5 Calculate load weight in consultation with relevant persons. |
| | 1.6 Consult with relevant persons to confirm that load weight is within the rated capacity of the crane and the working load limit (WLL) of the lifting gear. |
| | 1.7 Determine and inspect crane and load movement paths. |
| | 1.8 Confirm implementation of and compliance with traffic management plan. |
| | 1.9 Establish required communication methods with relevant persons. |
| | 1.10 Establish and maintain communication with relevant persons to ensure lift plan and risk controls are communicated clearly, including any impact on other workplace activities. |
| 2 Prepare for task. | 2.1 Check signs and labels to ensure visibility and legibility. |
| | 2.2 Assess wind and other adverse weather conditions and determine whether their impact on the crane and loads is |

- within the manufacturer requirements for safe operation.
- 2.3 Safely access the area from which the crane will be operated.
 - 2.4 Test crane safety devices in accordance with workplace requirements.
 - 2.5 Carry out pre-start crane checks and shut down, tag out, report and record identified damage or defects, in accordance with safe work practices, workplace-specific procedures and policies, and manufacturer requirements.
 - 2.6 Check that crane logbook has been completed and signed, that it is correct for crane type and current compliance, and that any rectifications have been signed off.
 - 2.7 Start crane, carry out operational checks, check for abnormal noises, smoke or fumes and shut down, tag out, report and record identified abnormalities, in accordance with safe work practices, workplace-specific procedures and policies, and manufacturer requirements.
- 3 Transfer load.
- 3.1 Position boom or jib and hook block over load as directed by licensed dogger.
 - 3.2 Carry out test lift to allow for checks and adjustments to slinging to be made by licensed dogger.
 - 3.3 Under the direction of a licensed dogger, transfer loads using appropriate crane movements.
 - 3.4 Use radio and interpret hand and whistle signals to communicate with licensed dogger.
 - 3.5 Lower and land load, allowing lifting gear to be disconnected.
- 4 Shut down and secure crane.
- 4.1 Apply hoist, trolley and travel brakes.
 - 4.2 Shut down crane in accordance with manufacturer requirements.
 - 4.3 Carry out routine shut-down checks, and secure crane and equipment against unauthorised access.

- 4.4 Safely exit the area from which the crane has been operated.
- 4.5 Report and record any damage or defects.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCLTC4002A Licence to operate a self-erecting tower crane.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLTC4002 Licence to operate a self-erecting tower crane

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Missing text in Element and Performance Criteria Point 2 corrected.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCLTC4002A Licence to operate a self-erecting tower crane. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by safely operating a self-erecting tower crane with a maximum rated capacity of at least 2000 kg to move at least four loads of different shapes, sizes and weights in conjunction with a licensed dogger slinging and guiding loads.

For all loads, the candidate must:

- check relevant workplace information, including safe work method statements (SWMSs) and equipment service and maintenance records and checklists
- perform all activities in compliance with safe work practices and workplace-specific procedures and policies
- check, use, maintain and store equipment in compliance with manufacturer requirements
- identify hazards and implement appropriate risk controls and safety measures and equipment
- confirm that load weight is within the rated capacity of the crane
- locate and interpret signs and labels
- check and use safety devices
- lift and move loads using the main hook through an obstacle course, including a 90-degree minimum slew, using all crane operational controls:
 - trolleying levers
 - hoisting and lowering levers
 - slewing levers
- use two-way radio and interpret hand and whistle signals to communicate with licensed dogger
- implement shutdown procedures.

Movements must include:

- luffing, as applicable, or trolleying
- slewing
- hoisting and lowering.

Loads must include:

- a load of more than 50% of the configured capacity of the crane
- stillage containing at least ten scaffolding standards or loose steel pipes of 200 kg or more that requires a licensed dogger to sling
- an uneven load that requires slinging
- a round load with a minimum diameter of 300 mm and minimum length of 3 m that requires slinging.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe work requirements for operating a self-erecting tower crane under Australian Standards, and Commonwealth and state or territory work health and safety (WHS) legislation and codes of practice
- workplace information, including legislative requirements covered by:
 - SWMSs
 - permits and certifications
 - information about equipment:
 - service and maintenance checklists and records
 - manufacturer specifications and manuals
 - workplace procedures, including emergency plans and incident reporting
- hazard identification and mitigation strategies, including the hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - use of personal protective equipment (PPE)
- hazards commonly encountered in self-erecting tower crane operations:
 - overhead and underground hazards, including powerlines
 - other cranes and booms
 - other plant
 - obstructions
 - combustible substances, including fuel
 - electrical hazards
 - insufficient lighting

- traffic
- wind and other adverse weather conditions
- pedestrian traffic
- work required at heights
- risk controls and safety measures and equipment:
 - safety tags on electrical switches and isolators
 - insulated powerlines
 - safety observer
 - exclusion zone
 - disconnected power
 - traffic barricades and controls
 - pedestrian controls
 - movement of obstructions
 - evacuation procedures
 - adequate illumination
 - firefighting equipment
 - appropriate earthing for the conditions such as static electricity build up due to electromagnetic radiation (EMR) or wind
 - fall prevention and fall arrest equipment
- PPE:
 - hard hat
 - safety boots
 - gloves
 - high-visibility clothing
 - breathing, hearing, sight, skin and sun protection
- hand and whistle communication signals:
 - stop
 - hoist up and down
 - trolley in and out
 - slew left and right
- signs and labels:
 - crane data plates and labels
 - load charts
 - crane decals
 - operational control lever labels
- self-erecting tower crane safety devices:
 - audible and visual devices
 - aviation lights
 - illumination
 - motion limits

- overload limits
- radios
- anti-collision devices
- crane controls:
 - hoisting and lowering levers
 - slewing levers
 - slew brake and locks
 - trolleying levers
 - emergency stop control
- crane movements:
 - slewing
 - hoisting and lowering
 - trolleying
- multiple crane communication systems
- processes for responding to unplanned and unsafe situations, including equipment failure or loss of control
- emergency and evacuation procedures, including fire procedures
- shutdown procedures:
 - raise boom or jib to shut-down position
 - park trolley in shut-down position
 - retract hoist rope and hook block
 - place in weather vane mode
 - turn off and secure remote to prevent unauthorised access
 - isolate electrical supply
 - lock and secure against access
- self-erecting tower crane characteristics, capabilities and operation to suit loads of different shapes, sizes and weights
- use and interpretation of crane manufacturer specifications, including load charts to enable the crane to be configured within its rated capacity.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Only assessors who are accredited in the licence class by the appropriate WHS regulator for the jurisdiction where the licence is obtained are permitted to conduct the final high-risk work licence assessment. The final licence assessment will only be undertaken with candidates who have completed training and been formally assessed against all elements in this unit.

Assessment must be conducted in the workplace or in a simulated workplace environment using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations, including:

- the use of full-scale, industry-standard equipment, not simulators
- performance of tasks within the timelines expected in a workplace.

Candidates must have access to:

- a self-erecting tower crane with a maximum rated capacity of at least 2000 kg, which is in a safe and compliant condition
- lifting and other equipment required for self-erecting tower crane operations
- risk controls and safety measures and equipment
- communication equipment, including whistle and two-way radios
- loads as specified in the Performance Evidence
- a licensed dogger to sling and direct loads
- workplace information and records, including:
 - equipment and maintenance checklists
 - record system for service and maintenance history
 - incident reports
 - workplace procedures, including emergency plans
 - equipment manuals and manufacturer specifications.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM1012 Work effectively and sustainably in the construction industry

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified to reflect endorsed version.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCM1012 Work effectively and sustainably in the construction industry. Updated to reflect current industry terminology, tools and equipment.

Application

This unit of competency specifies the skills and knowledge required to work effectively and sustainably in the construction industry.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Work effectively in a team.	1.1 Participate in planning work tasks with team members.
	1.2 Work with team members to review team purpose, roles, responsibilities, goals, plans and objectives.
	1.3 Work with team members following guidelines, directions and instructions to complete work tasks.
	1.4 Work with team members to resolve problems that impede the team's performance.
2 Investigate construction industry employment pathways.	2.1 Describe the process for becoming a tradesperson or skilled operator in the construction industry.
	2.2 Identify own existing skills and the additional skills required for a tradesperson or skilled operator role in the construction industry.
3 Identify and follow environmental and resource efficiency requirements.	3.1 Identify environmental and resource efficiency requirements that apply to entry level roles in the construction industry.
	3.2 Follow requirements to identify and report environmental hazards.
	3.3 Follow requirements to identify and report resource efficiency issues.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM1012 Work effectively and sustainably in the construction industry.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM1012 Work effectively and sustainably in the construction industry

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Rectified to reflect endorsed version.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM1012 Work effectively and sustainably in the construction industry. Updated to reflect current industry terminology, tools and equipment.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by:

- working effectively as a member of a team to plan and perform a construction task
- working with members of a team to review the team's purpose, roles, responsibilities, goals, plans and objectives
- listing own existing skills and the additional skills required for a selected tradesperson or skilled operator role in the construction industry
- identifying environmental and resource efficiency requirements that apply to entry level roles in the construction industry
- preparing basic reports on each of an environmental hazard and a resource efficiency issue.

All work must be performed to the standard required in the workplace.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- skills and knowledge required to work effectively in the construction industry
- construction job roles and employment opportunities in the construction industry
- techniques for working effectively in a construction team environment
- techniques for determining own skills and skills required for career opportunities
- environment and resource efficiency requirements in the construction industry.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM1013 Plan and organise work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Rectified to reflect endorsed version.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM1013 Plan and organise work.
Updated to reflect current industry terminology, tools and equipment.

Application

This unit of competency specifies the skills and knowledge required to plan and organise basic work tasks on a construction site.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1	Determine and plan	1.1	Determine work task outcomes and other requirements.
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- | | | |
|-----------------------------|--|---|
| basic work task activities. | 1.2 | Break the work task into its component tasks. |
| | 1.3 | Assess the component tasks to determine what needs to be done and how it is to be done. |
| | 1.4 | Estimate the time and the number of personnel required to complete each component task. |
| | 1.5 | Identify the tools and equipment required, including personal protective equipment (PPE) for each stage of the task |
| | 1.6 | Plan the sequence of the component tasks in a logical order and to maximise efficient use of resources. |
| | 1.7 | Prepare a written work plan and a list of resources required to complete the overall work task. |
| | 2 Organise performance of basic work task. | 2.1 |
| | 2.2 | Confirm availability of required tools and equipment, including PPE. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM1013 Plan and organise work.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM1013 Plan and organise work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Rectified to reflect endorsed version.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM1013 Plan and organise work.

Updated to reflect current industry terminology, tools and equipment.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by planning and organising a basic work task on a construction site that includes a minimum of ten component tasks and a team of at least three people.

All work must be performed to the standard required in the workplace and must comply with appropriate work health and safety (WHS) and environmental requirements, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- policies and standards for planning and organising work
- environmental and workplace requirements for basic work tasks
- drawings and specifications relevant to basic work tasks
- processes for:
 - determining task requirements
 - undertaking all aspects of planning and organising work tasks
 - estimating requirements for work time, personnel, tools and equipment
 - planning of component tasks to complete work tasks
 - organising the implementation of work task planning
 - recording work task planning and organising activities
 - processes for working with team members to review a work plan, schedule the work, allocate roles and responsibilities, and review work health and safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM1014 Conduct workplace communication

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Correction to unit mapping metadata.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified to reflect endorsed version.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCM1014 Conduct workplace communication. Updated to reflect current industry terminology, tools and equipment.

Application

This unit of competency specifies the skills and knowledge required to communicate effectively with other workers in a construction workplace environment.

The unit includes gathering, conveying and receiving information through verbal and written forms of communication.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Convey and receive information and instructions.	<p>1.1 Receive information and instructions from others using effective listening, questioning and speaking skills to confirm understanding.</p> <p>1.2 Convey information and instructions to others using effective listening, questioning and speaking skills to confirm understanding.</p>
2 Access, interpret and present information.	<p>2.1 Access and interpret basic information from a range of sources.</p> <p>2.2 Select and sequence information to prepare a basic written report.</p> <p>2.3 Select and sequence information to prepare and present a basic verbal report.</p> <p>2.4 Enter information into basic workplace records and documents.</p>
3 Participate in simple meeting processes.	<p>3.1 Describe and follow simple processes and procedures for meetings.</p> <p>3.2 Provide constructive contributions to meeting discussions.</p>

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM1014 Conduct workplace communication.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM1014 Conduct workplace communication

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Correction to unit mapping metadata.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified to reflect endorsed version.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCM1014 Conduct workplace communication. Updated to reflect current industry terminology, tools and equipment.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by:

- conveying and receiving information and instructions to and from others
- accessing, interpreting and sequencing information
- presenting information in verbal and written reports
- entering information into workplace records and documents
- participating in simple meeting processes.

All work must be performed to the standard required in the workplace.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of techniques for:

- conveying and receiving information and instructions
- effective listening, questioning and speaking skills to confirm understanding
- accessing and interpreting basic information from a range of sources
- selecting and sequencing basic information
- preparing and presenting basic written reports
- preparing and presenting basic verbal reports

- participating effectively in simple meeting processes
- entering information into basic workplace records and documents.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM1015 Carry out measurements and calculations

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Rectified to reflect endorsed version.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM1015 Carry out measurements and calculations. Updated to reflect current industry terminology, tools and equipment.

Application

This unit of competency specifies the skills and knowledge required to undertake basic measurements and calculations to determine task and material requirements in a construction work environment.

A person working at this level would be expected to complete tasks assigned to them, under supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|-----------------------------|-----|--|
| 1 | Obtain measurements. | 1.1 | Select most appropriate equipment and method for obtaining the measurement. |
| | | 1.2 | Use a ruler or tape to obtain linear measurements accurate to 1 mm. |
| 2 | Perform basic calculations. | 2.1 | Take basic measurements and calculate quantities of materials in a construction environment, using basic formulae for each of: weight, area, volume, perimeter, circumference, ratio and percentage. |
| | | 2.2 | Convert measurements in metres to millimetres and measurements in millimetres to metres. |
| | | 2.3 | Check calculations for accuracy and record calculation workings and results. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM1015 Carry out measurements and calculations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM1015 Carry out measurements and calculations

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Rectified to reflect endorsed version.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM1015 Carry out measurements and calculations. Updated to reflect current industry terminology, tools and equipment.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by:

- taking basic measurements and performing basic calculations to determine quantities of materials for construction work using each of the following:
 - weight
 - area
 - volume
 - perimeter
 - circumference
 - ratio
 - percentage
- demonstrating converting measurements in metres to millimetres and measurements in millimetres to metres.

All work must be performed to the standard required in the workplace.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- types of equipment required for planning and performing basic measurements and calculations and their characteristics, uses and limitations, including:
 - rulers
 - tape measures

- digital measuring and calculating devices
- methods of calculating the area and volume of the following in a construction environment:
 - rectangles
 - squares
 - circles
 - triangles
 - trapeziums
 - cubes
 - cylinders.
 -

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM1016 Identify requirements for safe precast and tilt-up work

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes but is not equivalent to CPCCCM1016 Identify requirements for safe tilt-up work.
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Application

This unit of competency specifies the skills and knowledge required to identify requirements for safe precast and tilt-up work in construction. It includes requirements for safe handling of prefabricated concrete elements such as precast wall panels, beams, columns and slabs.

A person working at this level is expected to complete tasks assigned to them under supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify precast or tilt-up construction and risk management	1.1 Identify sequence of tasks and activities for each stage of planned precast or tilt-up construction process, and typical faults, problems and hazards.
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- processes.
- 1.2 Identify basic principles of risk management and responsibilities of duty holders for planned precast or tilt-up construction process.
 - 1.3 Identify methods and procedures used to control precast or tilt-up construction hazards, including the content of a job safety analysis, work plan and/or work health and safety management plan, and safe work method statement.
 - 1.4 Identify procedures for responding to, rectifying and reporting faults, problems, and hazards.
- 2 Identify own role and responsibilities in the precast or tilt-up construction process.
- 2.1 Identify own role and responsibilities and those of others relevant to the precast or tilt-up construction process.
 - 2.2 Identify regulatory requirements relevant to own role and responsibilities in the precast or tilt-up construction process.
 - 2.3 Identify general work procedures, documentation, drawings and plans for carrying out precast or tilt-up construction process relevant to own role and responsibilities.
 - 2.4 Identify general safety requirements for equipment and tools used in the precast or tilt-up construction process relevant to own role and responsibilities.
 - 2.5 Communicate with relevant persons to establish that key safety requirements have been met before undertaking own work associated with the precast or tilt-up construction process.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes but is not equivalent to CPCCCM1016 Identify requirements for safe tilt-up work.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM1016 Identify requirements for safe precast and tilt-up work

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes but is not equivalent to CPCCOM1016 Identify requirements for safe tilt-up work.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by identifying requirements for safe precast or tilt-up work at one workplace where the precast or tilt-up construction process is used.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- basic principles of risk management relevant to precast and tilt-up construction
- general safety requirements for equipment and tools used in precast and tilt-up construction:
 - cranes
 - elevated work platforms
 - manual tools
 - mobile scaffolding
 - portable electric and pneumatic tools
 - braces and props
 - rigging equipment and gear
 - safety net and static lines
- work health and safety and regulatory requirements relevant to the precast and tilt-up construction process:
 - Australian Standard (AS) 3850 *Prefabricated concrete elements*
 - duty holder responsibilities
 - emergency procedures
 - job safety analyses
 - personal protective equipment
 - safe work method statements
 - work plans and/or work health and safety management plans

- working around mobile plant and machinery, and general site hazards
- stages of the precast and tilt-up construction processes and their interrelationships:
 - design and manufacture
 - handling, storage and transportation
 - craning and erection
 - temporary bracing, stabilisation and incorporation of concrete panels
 - demolition
- typical faults, problems and hazards that may occur when design and safety requirements are not met in the precast and tilt-up construction process.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to full documentation relating to jurisdictional requirements for safe precast and tilt-up work.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM1017 Prepare simple construction sketches

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit specifies the skills and knowledge required to produce simple preliminary sketches for basic construction work. These sketches, often sketched freehand and in pencil, are used to illustrate the size and form of a simple design solution or brief.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit CPCCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit.

Pre-requisite Unit

Nil.

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare to create simple construction sketches.	1.1	Determine key features of simple design solution or brief to be sketched.
	1.2	Review standard drawing conventions for simple sketches.
	1.3	Select suitable two and three dimensional views for simple sketches.

- 2 Create simple construction sketches.
 - 2.1 Create simple two and three dimensional construction sketches of simple design solutions or briefs.
 - 2.2 Label and date sketches.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM1017 Prepare simple construction sketches

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by creating simple two and three dimensional construction sketches of three simple design solutions or briefs.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- drawing conventions for simple preliminary construction sketches
- types of simple sketches, including:
 - floor plans
 - building elevation sketches
 - land boundaries and footprint of building
 - sectional sketches
 - three dimensional sketches
- tools, materials and equipment used for creating drawings.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM2001 Read and interpret plans and specifications

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM2001 Read and interpret plans and specifications. Updated to reflect current industry terminology, tools and equipment

Application

This unit of competency specifies the skills and knowledge required to read and interpret plans and specifications relevant to construction operations at a basic level.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit CPCCWHS1001 Prepare *to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Explain features and 1.1 Explain the key features and functions of each of the

functions of plans /drawings and specifications.	main types of plans/drawings used in the construction industry.
1.2	Locate and explain the purpose of the legend on <i>plans/drawings</i> used in the construction industry.
1.3	Explain the meaning of construction symbols and abbreviations used on plans/drawings in the construction industry.
1.4	Check title panels on plans/drawings and specifications to verify latest amendments are included, and report inconsistencies.
2 Locate key features on a site from site plan/drawings.	<p data-bbox="655 790 1321 862">2.1 Select and use personal protective equipment (PPE) required to enter a proposed construction site.</p> <p data-bbox="655 898 1107 927">2.2 Orientate the site plan with the site.</p> <p data-bbox="655 963 1377 1037">2.3 Locate existing services, key features and boundaries of the site from the site plan and associated drawings.</p>
3 Identify project requirements from plans/drawings and specifications.	<p data-bbox="655 1140 1337 1245">3.1 Identify construction types, project dimensions and nominated locations from project plans/drawings and specifications.</p> <p data-bbox="655 1281 1299 1386">3.2 Identify environmental requirements, controls and locations from environmental plans, project plans/drawings and specifications.</p> <p data-bbox="655 1422 1377 1496">3.3 Identify standards of work, finishes and tolerances from project plans/drawings and specifications.</p> <p data-bbox="655 1532 1366 1599">3.4 Identify required materials from project plans/drawings and specifications.</p>

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM2001 Read and interpret plans and specifications

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM2001 Read and interpret plans and specifications

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM2001 Read and interpret plans and specifications. Updated to reflect current industry terminology, tools and equipment

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by reading, interpreting and describing, at a basic level, the requirements for a proposed construction project from a set of plans/drawings and specifications.

All work must be performed to the standard required in the workplace and must comply with work health and safety (WHS) requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- features and functions of different types of plans, drawings and specifications at a basic level, including:
 - construction plans
 - cross-sectional plans
 - dimensions and notes
 - illustrations
 - project specifications including structural detail and specification providing illustrations and dimensions
 - site plans
 - engineering plans
 - legends, symbols and abbreviations used on construction plans and drawings
 - title panels

- processes for:
 - checking amendments to plans, drawings and specifications at a basic level
 - orientating site plans to sites
 - determining information from site plans, drawings and specifications, including:
 - site locations
 - key features
 - construction types
 - project dimensions,
 - environmental requirements
 - materials types.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM3001 Perform construction calculations to determine carpentry material requirements

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to plan and perform calculations to determine material requirements for a construction project.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001* Prepare to work safely in the construction industry meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Review drawings, specifications and workplace requirements for a construction project.

1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and

specifications.

- | | | | |
|---|--|-----|---|
| 2 | Calculate area and volume of construction materials for the project. | 2.1 | Review drawings and specifications to determine dimensions of each type of construction material for the project. |
| | | 2.2 | Calculate the area of each type of lining material. |
| | | 2.3 | Calculate the total area of the building wrap and of each type of external cladding material. |
| | | 2.4 | Calculate the total area of each type of roofing material. |
| | | 2.5 | Calculate the quantity of materials that are measured by volume. |
| 3 | Calculate the requirements for construction for the project. | 3.1 | Calculate the quantity of wall and roof framing materials. |
| | | 3.2 | Calculate the dimensions and quantity of sheets of each type of flooring and lining material, ensuring that the most economical layout is employed. |
| | | 3.3 | 3Calculate the length of linear flooring and lining material, ensuring that the most economical layout is employed. |
| | | 3.4 | Calculate the dimensions and quantity of sheets of external cladding material, ensuring that the most economical layout is employed. |
| | | 3.5 | Calculate the length of linear external cladding material, ensuring that the most economical layout is employed. |
| | | 3.6 | Calculate the dimensions and quantity of sheets or units of roofing material, ensuring that the most economical layout is employed and allowing for overlaps. |
| 4 | Check and record results. | 4.1 | Record workings and review calculations for accuracy. |
| | | 4.2 | Record results of calculations as required for costing and ordering materials. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM3001 Perform construction calculations to determine carpentry material requirements

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by analysing the drawings and specifications for a building with a minimum of 6 rooms, including a kitchen and bathroom and linear external lining, and preparing a detailed list of materials and calculated quantities of each material for:

- wall and roof framing
- internal lining and flooring
- external cladding and roofing.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- types of equipment required for planning and performing measurements and calculations and their characteristics, uses and limitations, including calculators
- methods of using formulas to calculate the area/volume of the following in a construction environment:
 - rectangles
 - squares
 - circles
 - triangles
 - trapeziums
 - cubes
 - cylinders
- methods of converting measurements in metres to millimetres and measurements in millimetres to metres
- methods of accurately determining dimensions of materials for construction projects by scaling requirements from drawings and specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCOM3006 Carry out levelling operations

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM3006 Carry out levelling operations. Updated to reflect current industry terminology, tools and equipment.

Application

This unit of competency specifies the skills and knowledge required to carry out levelling operations to establish correct and accurate set-out of buildings and components, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

It includes:

- using the rise and fall and height of collimation methods
- setting up, testing and using levelling devices
- undertaking closed and open traverses using a range of levelling equipment
- calculating distances using stadia lines.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.3 Select tools and equipment, including personal protective equipment (PPE), check for serviceability and report any faults.
 - 1.4 Fit PPE correctly.
 - 1.5 Inspect work site, assess hazards and services, and apply risk controls, including required signage and barricades.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 1.7 Confirm team roles and verbal and non-verbal communication signals.
- 2 Carry out levelling procedures using rise and fall method.
 - 2.1 Set up and test instrument for operational effectiveness and accuracy.
 - 2.2 Set up or locate datum point.
 - 2.3 Take and record readings from the datum and at nominated or selected stations following project specifications.
 - 2.4 Identify backsights, intermediate sights and foresights, and book levels.
 - 2.5 Transfer instrument to another location, repeat process, and record change station and record readings.
 - 2.6 Calculate reduced levels for all stations using rise and fall method, and check accuracy of recordings using the three-check method.
- 3 Carry out levelling procedures using
 - 3.1 Set up and test instrument for operational effectiveness and accuracy, and check tolerances.

height of collimation method.	3.2	Set up or locate datum point.
	3.3	Take and record readings to datum and establish the height of collimation.
	3.4	Take readings at nominated or selected stations following project specifications, and record in field book.
	3.5	Transfer instrument to another location, establish new height of collimation, and record change station in field book.
	3.6	Calculate reduced levels using height of instrument method.
	3.7	Calculate reduced levels for all stations and record heights and levels in field book.
	3.8	Check accuracy of readings using height of collimation method of calculation and three check method.
	4 Calculate distances using stadia lines.	4.1
4.2		Record readings and distances.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCOM3006 Carry out levelling operations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCOM3006 Carry out levelling operations

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCM3006 Carry out levelling operations. Updated to reflect current industry terminology, tools and equipment.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by carrying out levelling operations over a minimum of two change points to:

- identify site hazards
- establish approximate distances and transfer of reduced levels
- measure and record:
 - ground levels at respective critical set-out points
 - heights or levels for building components
 - heights or levels of ceilings and floors
 - slab or pad levels for placement of steel columns or masonry piers
- determine shooting levels for:
 - concrete slabs
 - excavation or footings
- transfer levels or heights for construction projects
- calculate rise and fall and height from collimation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the Australian Standards relevant to carrying out levelling operations
- workplace quality policies and standards relevant to carrying out levelling operations
- safety requirements for carrying out levelling operations
- basic construction and levelling processes
- construction plans, symbols and construction terminology relevant to carrying out levelling operations
- processes for interpreting engineering drawings and sketches for carrying out levelling operations

- processes for setting out construction tasks for levelling operations
- project quality requirements for carrying out levelling operations
- site isolation and traffic control responsibilities and authorities
- levelling techniques commonly used in construction work
- levelling activities:
 - establishing approximate distances and transfer of reduced levels
 - locating site hazards and services
 - measuring and recording ground levels at respective critical set-out points
 - measuring and recording heights or levels for installing building components
 - measuring and recording heights or levels of ceilings and floors
 - measuring and recording slab or pad levels for placement of steel columns or masonry piers
 - taking levels for concrete slabs
 - taking levels for excavation or footings
 - calculating rise and fall and height from collimation
- types of tools and equipment used for carrying out levelling operations:
 - spirit levels
 - straight edge
 - automatic/optical levelling devices
 - laser levels
 - water level
- processes for checking operation and tolerances:
 - two peg test for automatic level
 - reverse readings for spirit level
- types of level readings:
 - negative readings
 - datum
 - backsight
 - foresight
 - intermediate sight
 - plumb
- maintenance of levelling devices:
 - authorised operator servicing and minor replacements
 - cleaning
 - monitoring, recording and reporting faults.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON2021 Handle concreting materials and components

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCCCO2021 Handle concreting materials.

Application

This unit of competency specifies the skills and knowledge required to safely handle concreting materials and components in preparation for concreting work. It includes checking materials and components for conformity to schedules, plans and specifications, and using manual-handling techniques to sort and stack materials and components for work. It requires identifying and safely handling hazardous materials and waste in accordance with safety data sheets (SDS) and cleaning up on completion of work tasks.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare for work.
 - 1.1 Read work instructions and clarify requirements for handling concreting materials and components with relevant persons.
 - 1.2 Plan work tasks to comply with relevant legislation and regulations, and manufacturer, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select and fit required personal protective equipment (PPE).
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and rectify or report any faults.

- 2 Identify, move and stack concreting materials and components.
 - 2.1 Check types and quantities of materials and components against material schedule, plans and specifications and report problems.
 - 2.2 Identify handling characteristics of concreting materials from SDS and regulatory requirements.
 - 2.3 Use safe and effective manual-handling techniques to move concreting materials and components to specified location.
 - 2.4 Stack concreting materials and components to facilitate identification and retrieval and clear of access ways to protect against damage.
 - 2.5 Position concreting components ready for installation in accordance with plans, work instructions and manufacturer requirements.

- 3 Remove concreting materials and components on completion of task.
 - 3.1 Identify hazardous concreting materials and apply waste management procedures in accordance with relevant SDS and regulatory requirements.
 - 3.2 Remove surplus concreting materials and components using safe manual-handling techniques.
 - 3.3 Use dust suppression procedures to minimise health risk to people in the work environment.

- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO2021 Handle concreting materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON2021 Handle concreting materials and components

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0 Supersedes and is equivalent to CPCCCO2021 Handle concreting materials.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by handling concreting materials and components in preparation for concreting tasks at three different placement sites.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation and regulations relevant to concreting material and component handling tasks:
 - environmental protection and waste disposal
 - work health and safety (WHS):
 - hazard identification and risk control
 - personal protective equipment (PPE)
 - safe manual handling techniques
 - safety data sheets (SDS) and hazardous materials handling
 - safety manuals and instructions for tools and equipment used to handle materials and components
 - safe work method statements
 - signage and barricades
- health risks associated with silica dust exposure
- tools and equipment used when handling concreting materials and components
- types and purpose of components used in concreting:
 - bar chairs
 - bar steel
 - bracing
 - decking
 - key joints

- plastic membrane
- push-pull props
- reinforcement bars
- reinforcement mesh
- spacers
- steel and timber formwork
- support props
- waffle pods
- types and purpose of materials used in concreting:
 - additives
 - aggregates
 - cement
 - curing compounds
 - form release agents
 - general non-toxic concreting materials
 - oxides
 - sand
 - water
- workplace requirements for handling concreting materials and components:
 - cleaning up the work area
 - maintaining and storing tools, equipment, materials and components
 - reporting problems
 - safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, instructions, concreting materials and components, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON2022 Select, use and maintain concreting plant, tools and equipment

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO2022 Select, check and maintain concreting plant, tools and equipment.
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Application

This unit of competency specifies the skills and knowledge required to safely select, use and maintain plant, tools and equipment used for concreting work.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare for	1.1 Read work instructions and clarify requirements for using concreting plant, tools and equipment with relevant
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- work.
- persons.
- 1.2 Plan work tasks to comply with relevant legislation and regulations, and manufacturer, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select and fit required personal protective equipment (PPE).
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
- 2 Select and check concreting plant, tools and equipment.
- 2.1 Select plant, tools and equipment required for concreting task in accordance with work instructions.
 - 2.2 Read manufacturers' instructions to identify functions, limitations and safe methods of operation for selected plant, tools and equipment.
 - 2.3 Check plant, tools and equipment for serviceability and rectify or report any faults in accordance with manufacturer and workplace requirements.
- 3 Use plant, tools and equipment for concreting task.
- 3.1 Use hand tools to carry out concreting task safely and in accordance with manufacturer requirements.
 - 3.2 Use plant, power tools and equipment to carry out concreting task safely and in accordance with manufacturer and workplace requirements.
- 4 Clean, maintain and store plant, tools and equipment.
- 4.1 Clean and maintain personal protective equipment (PPE) and concreting plant, tools and equipment in accordance with manufacturer and workplace requirements.
 - 4.2 Store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO2022 Select, check and maintain concreting plant, tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON2022 Select, use and maintain concreting plant, tools and equipment

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO2022 Select, check and maintain concreting plant, tools and equipment.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by selecting, using and maintaining concreting plant, tools and equipment for three different concreting tasks.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation and regulations relevant to selecting, using and maintaining concreting plant, tools and equipment:
 - hazard identification and risk control
 - personal protective equipment (PPE)
 - safety manuals and instructions for plant, tools and equipment
 - safe work method statements
 - signage and barricades
- health risks associated with silica dust exposure
- uses, maintenance and limitations of concreting plant, tools and equipment:
 - 240 V power supplied electrically operated portable and static power tools and leads
 - compressors
 - elevated work platforms
 - hand tools:
 - bolt cutters
 - crow bars
 - cutting knives
 - edging tools
 - floats
 - grinders
 - hammers

- jointers
- kneel boards
- levelling equipment
- long handled shovels
- measuring tapes
- nail bags
- picks
- pinch bars
- pliers
- rakes
- sledge hammers
- steel fixing reels
- string lines
- wire brushes
- scissor lifts
- screeds:
 - air or petrol driven
 - laser
 - magnesium
 - mechanical
 - rolling
- trowels:
 - fresno trowels
 - magnesium trowels
 - ride-on trowelling machine with pans or blades
 - steel trowels
 - stick trowels
 - walk behind trowels
 - vibrators
- workplace requirements for selecting, using and maintaining concreting plant, tools and equipment:
 - cleaning and storing PPE, plant, tools and equipment
 - reporting problems
 - safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, instructions, PPE and concreting plant, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3035 Determine concrete supply requirements

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3035 Assess and specify concrete supply requirements.

Application

This unit of competency specifies the skills and knowledge required to determine concrete supply requirements for different areas and features of planned concreting work. It includes identifying required concrete properties, volumes and costs from site and project documentation, and scheduling delivery.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes. Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|-------------------------|-----|---|
| 1 | Assess site to identify | 1.1 | Review site information to determine general size and |
|---|-------------------------|-----|---|

concrete supply requirements.		nature of planned concreting work.
	1.2	Read project documentation to identify required concrete materials for each concreting area and feature.
	1.3	Identify delivery method for concrete supply at different locations and heights and implications for required concrete material properties.
2 Identify and itemise required concrete properties.	2.1	Identify strength grade designation of concrete supply for different areas or features of concrete work from project documentation and consultation with relevant persons.
	2.2	Identify variable components of, and additives to concrete mix for different areas or features of concrete work from project documentation and consultation with relevant persons.
	2.3	Identify concrete specifications to be met at on-site delivery from project documentation and consultation with relevant personnel.
	2.4	Itemise concrete supply requirements for each area and feature in accordance with specifications for concreting work, relevant Australian Standards and workplace requirements.
3 Calculate and document concrete volumes and supply costs.	3.1	Identify dimensions of each area and feature of concreting work from site drawings and specifications.
	3.2	Calculate and document required concrete volumes for each area and feature in accordance with specifications for concreting work and workplace requirements.
	3.3	Calculate and document total volumes of concrete supply for areas and features requiring identical properties.
	3.4	Estimate and document total cost of concrete supply in accordance with workplace requirements.
4 Schedule concrete delivery.	4.1	Identify concrete delivery locations and site access and egress details in consultation with relevant persons.
	4.2	Review project timelines and sequencing of work and

- calculate and document concrete delivery schedule to ensure continuous and timely supply.
- 4.3 Prepare supplier specifications for volumes of different concrete mixes.
 - 4.4 Confirm delivery schedule with relevant persons, document and finalise for inclusion with concrete specifications.
- 5 Finalise specifications for concrete supply.
- 5.1 Check specifications for concrete supply to confirm accuracy of concrete mix details for different areas or features.
 - 5.2 Check individual area, feature dimensions and concrete supply volume calculations to confirm accuracy.
 - 5.3 Check total volumes of concrete supply for areas and features requiring identical properties and confirm accuracy.
 - 5.4 Consult with relevant persons to obtain feedback on specifications and make required adjustments in accordance with workplace requirements.
 - 5.5 Complete supplier specifications in accordance with workplace requirements.
 - 5.6 Place concrete order with supplier including precise detail of delivery schedule and confirm order acceptance in accordance with workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3035 Assess and specify concrete supply requirements.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3035 Determine concrete supply requirements

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3035 Assess and specify concrete supply requirements.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by determining concrete supply requirements for three different concreting projects.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- concrete composition including types and application of cement, aggregate and additives
- concrete delivery methods and their effects on concrete material properties
- concrete delivery scheduling considerations:
 - additives
 - consideration for drying shrinkage requirements
 - megapascals (MPa)
 - site access point
 - time of delivery
 - volume
- content of concrete supply specifications
- processes for ordering correct slump for application
- processes for reviewing project plans and specifications to identify concrete supply requirements
- requirements of Australian Standards and the National Construction Code (NCC) relevant to concrete supply specifications
- types of concrete materials:
 - normal class with strength grades in the range N20 to N50
 - special class with strength grades in the range S20 to S100
- workplace requirements for determining concrete supply requirements:
 - documenting and checking supply requirements
 - quality

- reporting problems
- scheduling deliveries and placing orders.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3036 Plan concrete work and brief team

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3036 Plan concrete work and brief team.
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Application

This unit of competency specifies the skills and knowledge required to plan concrete work and brief team members. It includes determining the size and scope of concreting tasks and planning and scheduling activities to comply with work health and safety (WHS) requirements. It also includes identifying and sourcing resources required to complete tasks on time and within budget and communicating requirements to team members in preparation for work to commence.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Determine size and scope of concreting tasks.
 - 1.1 Review site and work documentation to determine size and complexity of concreting tasks.
 - 1.2 Review traffic management plan and site access and egress information and arrange additional required provisions or changes in consultation with relevant persons.
 - 1.3 Identify site amenities and provisions for storage and arrange additional required provisions or changes.

- 2 Assess and schedule concreting tasks.
 - 2.1 Assess specifications for concreting work and identify and sequence work stages to meet timelines for completion.
 - 2.2 Assess concurrent work of other construction teams and establish required communication channels.
 - 2.3 Schedule concreting tasks based on assessed concrete type and estimated curing time in predicted weather conditions for each placement.
 - 2.4 Plan work tasks to comply with relevant legislation, regulations, standards, codes, WHS and environmental and workplace requirements.
 - 2.5 Develop or adapt safe work method statement for individual tasks in accordance with WHS and workplace requirements.

- 3 Determine and source resources for concreting tasks.
 - 3.1 Calculate dimensions of each concrete pour from relevant documentation.
 - 3.2 Calculate, document and source required materials in preparation for work to commence on time and on budget.
 - 3.3 Identify, document and source plant, tools and equipment required for each work stage in line with task schedule to ensure availability on site.
 - 3.4 Identify specialised skill requirements for different task stages and check against available personnel to identify skill shortages.

- 3.5 Source additional personnel with necessary skills within required timeframe to ensure prompt start to work.
 - 3.6 Allocate personnel to tasks and record human resource requirements against all task stages.
- 4 Brief team members about concreting tasks.
- 4.1 Arrange team member site tour and induction to comply with WHS, environmental and workplace requirements.
 - 4.2 Explain and discuss details of task allocations and scheduling, and confirm team understanding of work requirements.
 - 4.3 Explain concurrent work of other construction teams and communication channels to team members and use questioning to confirm their understanding.
 - 4.4 Explain risk controls and provisions for dealing with risks, hazards, and contingencies to team members and use questioning to confirm their understanding.
 - 4.5 Encourage team members to clarify work requirements and to suggest process improvements at all stages.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3036 Plan concrete work and brief team.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3036 Plan concrete work and brief team

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3036 Plan concrete work and brief team.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by planning concrete work and briefing team members for three separate concreting tasks, each measuring a minimum of 100 square metres or for three separate pours for precast work.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations, codes and Australian Standards relevant to the planned concreting work:
 - environmental protection:
 - clean-up and waste management
 - stormwater management
 - material specifications
 - work health and safety (WHS)
- health risks associated with silica dust exposure
- plant, tools, equipment and materials used for concreting work
- project management principles and strategies used to plan concreting work
- project stages for concreting work:
 - work preparation:
 - fitting personal protective equipment (PPE)
 - selecting and checking plant, tools and equipment
 - site preparation:
 - excavation
 - formwork
 - subgrade
 - delivery

- placement
- compaction
- levelling
- finishing
- curing
- site clean-up
- specialised skill requirements for concreting work:
 - concrete repair and rectification
 - cutting and coring
 - decorative concreting
- types of concrete, applications and curing times in different weather conditions for planned concrete work
- workplace requirements for planning concrete work and briefing team members:
 - sourcing and allocating resources for concrete work
 - documentation
 - quality
 - reporting problems
 - safety:
 - dust and noise control
 - PPE
 - vibration management.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications and resources required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3041 Place concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCO3041 Place concrete.

Application

This unit of competency specifies the skills and knowledge required to place concrete into prepared formwork or foundations. It includes receiving and checking concrete against specifications, calculating the required volume of concrete, moving concrete from the truck to the pour location, and placing and screeding concrete.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|---|
| 1 Plan and prepare to place concrete. | 1.1 Interpret specifications for concrete placement and clarify requirements with relevant persons. |
|---------------------------------------|---|

- 1.2 Assess work site to check scope of work against specifications.
 - 1.3 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.4 Calculate required material quantities including volume of concrete to meet specifications.
 - 1.5 Estimate and record required time for concrete pour based on size of area to be concreted, volume of concrete, weather conditions and other relevant site factors.
 - 1.6 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
 - 1.7 Select and fit required personal protective equipment (PPE).
- 2 Prepare location for concrete placement.
- 2.1 Inspect work site, assess hazards and apply risk controls including required signage and barricades around pour location.
 - 2.2 Determine location for concrete placement from specifications.
 - 2.3 Discuss implications for concrete placement near existing structures with relevant persons and define separation or connection requirements.
 - 2.4 Check that location for placement is free of debris and waste.
 - 2.5 Ensure site access is clear to allow concrete to be received.
- 3 Receive concrete.
- 3.1 Check concrete delivery docket for accuracy against order.
 - 3.2 Direct concrete delivery vehicle to location of discharge.
 - 3.3 Identify slump tolerance against specifications and relevant standards for minimum grade.

- 3.4 Monitor concrete discharged via chute into appropriate receptacle and communicate with relevant persons to maintain safety and quality in accordance with workplace requirements.
- 4 Carry out concrete placement activities.
 - 4.1 Use required plant, tools and equipment to place concrete in horizontal layers into location in accordance with indicated levels.
 - 4.2 Ensure vertical drop of concrete is less than two metres to avoid segregation of concrete materials.
 - 4.3 Consolidate poured concrete using required compaction or vibration method.
 - 4.4 Carry out measurements and calculations throughout pour to ensure sufficient concrete is delivered to fill placement area, and place order for any shortfall in accordance with workplace requirements.
 - 4.5 Check finished levels against datum using levelling device and rectify incorrect levels.
 - 4.6 Screed concrete to required levels and grades in accordance with specifications.
- 5 Clean up.
 - 5.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 5.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3041 Place concrete.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3041 Place concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3041 Place concrete.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by placing concrete in either a non-precast work environment or a precast work environment:

- for the non-precast work environment, placing concrete at five different sites:
 - each site must measure at least 100 square metres
 - one site must include a fall of at least 25 millimetres over 1 metre in distance
- for the precast work environment, on five different occasions, placing concrete for a minimum of three panels involving more than one truck load of concrete.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- basic science of concrete involving cement chemical reaction (hydration) dependent on water content, temperature and time:
 - effect on plastic state performance:
 - benefits and non-benefits of admixture types and doses
 - plastic shrinkage cracking risk
 - effect on hardened state performance:
 - early age and later age strength development
 - drying shrinkage and cracking
- compliance requirements of legislation, regulations, codes and Australian Standards relevant to concrete placement tasks:
 - damp proofing
 - environmental protection and waste disposal
 - material specifications and placement tolerances
 - minimum and maximum temperature limits for pouring concrete
 - work health and safety (WHS)
- concrete placement techniques:
 - horizontal layering

- controlling vertical drop
- cold joints and how to manage them effectively
- consolidation
- concrete reinforcement
- levelling
- screeding
- correct positioning of reinforcement for different concrete products to ensure reinforcement is free from movement and has the correct cover within tolerance
- correct concrete compaction and vibration techniques and risks associated with improper vibration
- effects of temperature, wind and low humidity on the properties of concrete:
 - detrimental effect of water addition to concrete properties
 - precautions that should be taken to minimise any potential adverse effects when placing concrete
- health risks associated with silica dust exposure
- preparation requirements of concrete placement locations:
 - single slab
 - multi-level slab
 - set down and wet areas
 - temporary formwork
- processes for calculating material requirements at various times throughout a concrete pour
- processes for determining levels indicated by:
 - level pegs
 - lines
 - markers
- purpose and importance of slump testing and the impact to concrete strength and durability of adding water on site:
 - drying shrinkage
 - early age strength
 - density
 - cracking
 - discolouration
- specifications used to interpret concrete placement requirements:
 - methods for calculating concrete quantities
 - methods for checking minimum strength and mix specifications
 - types and applications of concrete materials
- types and purpose of concrete additives
- types, characteristics, uses and limitations of plant, tools, equipment and materials used when placing concrete
- workplace requirements for placing concrete:

- cleaning up the work area
- maintaining and storing plant, tools and equipment
- placing orders for shortfalls in materials
- quality
- reporting problems
- safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, work sites, materials, plant, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3042 Finish concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3042 Finish concrete.

Application

This unit of competency specifies the skills and knowledge required to finish placed and screeded concrete surfaces to specification. It requires using manual and mechanical finishing techniques including edge finishing.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare to finish concrete. | 1.1 Interpret specifications for concrete finishing and clarify requirements with relevant persons. |
|--|---|

- 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select and fit required personal protective equipment (PPE).
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
- 2 Apply concrete finishing techniques.
- 2.1 Leave concrete untouched until bleed water has come to the surface and evaporated.
 - 2.2 Assess concrete surface during curing process and maintain level surface to allow manual and mechanical trowelling to be applied.
 - 2.3 Assess strength of setting concrete using basic thumb test to ensure weight of mechanical trowel and operator can be accommodated.
 - 2.4 Apply mechanical trowelling in multiple overlapping lines to consolidate and densify the setting concrete surface.
 - 2.5 Install jointing system, finish edges, and trowel concrete to specifications.
 - 2.6 Finish concrete and check compliance with specifications and workplace requirements.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3042 Finish concrete.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3042 Finish concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3042 Finish concrete.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by finishing concrete in either a non-precast work environment or a precast work environment:

- for the non-precast work environment, finishing five different concrete surfaces with each surface measuring at least 100 square metres
- for the precast work environment, on five different occasions, finishing a minimum of three concrete panels involving more than one truck load of concrete.

Finishing techniques must include textured or non-slip and one other technique selected from the list below:

- edging and jointing system
- steel trowel.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations, codes and Australian Standards relevant to concrete finishing tasks:
 - environmental protection and waste disposal
 - work health and safety (WHS)
- concrete finishing techniques:
 - edging and jointing systems
 - steel trowel
 - textured or non-slip
- effects of temperature, wind and low humidity on the properties of concrete:
 - detrimental effect of water addition to concrete properties
 - precautions that should be taken to minimise any potential adverse effects when finishing concrete
- health risks associated with silica dust exposure
- methods for assessing the strength of setting concrete using the basic thumb test

- properties of concrete to be able to correctly identify when finishing techniques should be applied to minimise waste, delay and faults in finished concrete
- purpose and importance of construction, contraction, control and expansion joints:
 - doweling systems
 - installation methods
 - role in the long-term serviceability of concrete pavements
- types, characteristics, uses and limitations of plant, tools and equipment used to finish concrete
- types of drawings and specifications used to interpret concrete finishing requirements
- workplace requirements for finishing concrete:
 - cleaning up the work area
 - maintaining and storing plant, tools and equipment
 - reporting problems
 - quality
 - safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, concrete surfaces, plant, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3043 Cure concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCO3043 Cure concrete

Application

This unit of competency specifies the skills and knowledge required to carry out the initial curing process to poured concrete in order to control moisture evaporation from finished concrete. It includes using curing agents and techniques in accordance with engineering specifications.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------------------|---|
| 1 Plan and prepare to cure concrete. | 1.1 Interpret specifications to confirm concrete curing methods and clarify requirements with relevant persons. |
|--------------------------------------|---|

- 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Identify necessary preventative barriers to comply with regulatory and workplace requirements.
 - 1.4 Select and fit required personal protective equipment (PPE).
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select tools and equipment, check for serviceability and rectify or report any faults.
 - 1.7 Calculate and acquire required material quantities for specified curing methods and safely locate materials ready for use.
- 2 Carry out concrete curing activities.
- 2.1 Install and maintain preventative barriers to stop curing agents from affecting the surrounding environment.
 - 2.2 Assess weather and climatic conditions, calculate curing duration and make any adjustments necessary to achieve required curing outcome.
 - 2.3 Apply and maintain curing method on concrete surface in accordance with manufacturer and workplace requirements.
 - 2.4 Protect concrete during curing process in accordance with workplace requirements.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 3.2 Clean, check, maintain and store materials, tools and equipment in accordance with manufacturer, regulatory and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3043 Cure concrete

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3043 Cure concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3043 Cure concrete

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by curing concrete in either a non-precast work environment or a precast work environment:

- for the non-precast work environment, curing concrete at five different sites, each measuring at least 100 square metres
- for the precast work environment, curing a minimum of three panels on five different occasions.

A total of two curing techniques must be used:

- curing compound
- another technique selected from the following:
 - covering
 - flooding or ponding
 - fogging
 - steaming.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- basic science of concrete involving cement chemical reaction (hydration) dependent on water content, temperature and time:
 - effect on plastic state performance
 - benefits and non-benefits of admixture types and doses
 - plastic shrinkage cracking risk
 - effect on hardened state performance:
 - early age and later age strength development
 - drying shrinkage and cracking
- compatibilities of curing compounds with different floor finishes including vinyl, timber and natural stone products

- compliance requirements of legislation, regulations, codes and Australian Standards relevant to concrete curing tasks:
 - environmental protection and waste disposal
 - work health and safety (WHS)
- concrete curing techniques:
 - covering
 - curing compound
 - flooding or ponding
 - fogging
 - steaming
- effects of temperature, wind and low humidity on the properties of concrete:
 - detrimental effect of water addition to concrete properties
 - precautions that should be taken to minimise any potential adverse effects when curing concrete
- health risks associated with silica dust exposure
- methods for calculating curing duration
- specifications used to interpret material quantities and concrete curing requirements
- types and applications of materials and compounds used when curing concrete
- types, characteristics, uses and limitations of tools and equipment used when curing concrete
- ways to minimise moisture loss during curing using different curing methods
- workplace requirements for curing concrete:
 - cleaning up the work area
 - maintaining and storing materials, tools and equipment
 - quality
 - reporting problems
 - safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, materials, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3044 Apply decorative finishes to concrete

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3044 Apply decorative finishes to concrete.
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Application

This unit of competency specifies the skills and knowledge required to apply decorative finishes to concrete surfaces providing a distinct feature face finish for areas such as driveways, patios and paths. Decorative finishes involve using specialist techniques such as stencilling, pattern paving/stamping, colours, exposed aggregate or polishing.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to	1.1 Interpret specifications for applying decorative finish to
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- apply decorative finish to concrete.
- 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select and fit required personal protective equipment (PPE).
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and rectify or report any faults.
 - 1.6 Calculate and acquire material quantities to meet task specifications and safely locate materials ready for use.
 - 1.7 Plan methods for applying decorative finish to meet design specifications and avoid stormwater contamination in accordance with regulatory requirements.
- 2 Carry out decorative finish techniques.
- 2.1 Prepare concrete in accordance with required finish and specifications.
 - 2.2 Prepare materials and equipment for required finish in accordance with specifications and workplace requirements.
 - 2.3 Apply finish to concrete to create desired decorative effect in accordance with specifications.
 - 2.4 Check finish against required quality standards and rectify any non-conformances.
 - 2.5 Insert specified joints and/or sealant to surface in accordance with specifications.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 3.2 Clean, check, maintain and store materials, tools and equipment in accordance with manufacturer, regulatory and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3044 Apply decorative finishes to concrete.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3044 Apply decorative finishes to concrete

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3044 Apply decorative finishes to concrete.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying a finish selected from the list below to a minimum of twenty square metres of concrete on two different occasions:

- coloured concrete
- exposed aggregate
- pattern paving/stamping
- polished concrete
- stencilling.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations and Australian Standards relevant to the application of decorative finishes to concrete:
 - environmental protection:
 - wash-off and preventing contamination to drains and stormwater
 - waste disposal
 - finish specifications
 - work health and safety (WHS)
- health risks associated with silica dust exposure
- techniques, equipment, tools and materials used to apply the following decorative finishes to concrete:
 - coloured concrete
 - exposed aggregate
 - pattern paving/stamping
 - polished concrete
 - stencilling

- purpose of construction, contraction, control and expansion joints:
 - doweling systems
 - installation methods
- types of drawings and specifications used to interpret material quantities and finish requirements
- workplace requirements for applying decorative finishes to concrete:
 - cleaning up the work area
 - maintaining and storing materials, tools and equipment
 - quality
 - reporting problems
 - safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, concrete surfaces, materials, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3046 Repair and rectify concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CCCCCO3046 Repair and rectify concrete.

Application

This unit of competency specifies the skills and knowledge required to repair and rectify defects in concrete. Repairs and rectifications include patching, refinishing, sealing or recolouring to improve aesthetic appearance, as well as more significant repairs and rectifications such as cutting and replacing sections of concrete and repairing cracks in accordance with engineer or manufacturer specifications.

The unit does not cover structural defects requiring underpinning concrete or specialist works involving highly engineered solutions.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing work tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare to repair or rectify concrete.
 - 1.1 Assess concrete defect to determine possible causes and repair or rectification processes in consultation with relevant persons.
 - 1.2 Access and interpret manufacturer or engineer specifications associated with concrete repair or rectification work.
 - 1.3 Plan work tasks to comply with manufacturer or engineer specifications and relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.4 Select tools and equipment, check for serviceability and rectify or report any faults.
 - 1.5 Select and fit required personal protective equipment (PPE).
 - 1.6 Inspect work site, assess hazards and apply risk controls including required signage and barricades.
 - 1.7 Calculate and acquire material quantities to meet task specifications and safely locate materials ready for use.
 - 2 Carry out concrete repair or rectification activities.
 - 2.1 Use tools, equipment and materials for concrete repair or rectification activities safely in accordance with manufacturer and workplace requirements.
 - 2.2 Carry out concrete repair or rectification activities in accordance with engineer or manufacturer specifications and workplace requirements.
 - 2.3 Conduct checks to ensure concrete defect has been repaired or rectified and take actions required to meet engineer or manufacturer specifications and workplace requirements.
 - 3 Clean up.
 - 3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace

requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3046 Repair and rectify concrete.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3046 Repair and rectify concrete

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3046 Repair and rectify concrete.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by following manufacturer or engineer specifications to repair and rectify defects in a minimum of one square metre of concrete for each of the following:

- three types of defects selected from the list below:
 - cracks less than 2 millimetres (mm) in width
 - broken edge off concrete
 - effects of dusting
 - damaged or blistered horizontal concrete
 - damage to vertical elements requiring feather coat to repair
 - floor that has been screeded out of tolerance and requires self-levelling compound to repair
- one type of defect selected from the list below:
 - a live or dormant crack of between 2 mm and 10 mm in width
 - damaged concrete that needs to be cut out and replaced.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations and Australian Standards relevant to concrete repair and rectification tasks:
 - environmental protection and waste disposal
 - specified tolerances
 - work health and safety (WHS)
- common defects in concrete and associated repair or rectification techniques and materials:
 - bonded toppings failure
 - cracks including wet, live and dormant

- damaged or blistered concrete
- effects of dusting
- existing concrete toppings failure
- levelling failure
- non-bonding of new to old interfaces
- non-compliant surfaces
- oversized or undersized slabs
- subsidence
- correct techniques for vibrating concrete including correct mixes for vertical elements
- correct positioning of reinforcement where applicable for different repair products including repair material bond to substrate, bonding to reinforcement and cover
- dust suppression methods to be used when repairing or rectifying concrete
- health risks associated with silica dust exposure
- possible causes of defects in concrete including chemical and physical influences:
 - cement hydration process
 - climate effects
 - concrete placement, finishing and curing
- types and purpose of concrete additives
- types, characteristics, uses and limitations of tools, equipment and materials used when repairing and rectifying concrete
- workplace requirements for repairing and rectifying concrete:
 - cleaning up the work area
 - documentation and reporting
 - maintaining and storing tools and equipment
 - quality
 - safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, work sites, materials, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3047 Cut concrete

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is not equivalent to CPCCCO3047 Cut and core concrete.
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Application

This unit of competency specifies the skills and knowledge required to safely cut concrete. It requires using concrete and masonry saws to cut concrete to specification.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|-----------------------------------|-----|---|
| 1 | Plan and prepare to cut concrete. | 1.1 | Interpret specifications for concrete cutting and clarify requirements with relevant persons. |
|---|-----------------------------------|-----|---|

- 1.2 Assess work site to determine concrete type, thickness, reinforcement and base type impacting cutting requirements.
 - 1.3 Plan work tasks to comply with relevant legislation, regulations, standards and codes, and manufacturer, work health and safety (WHS), environmental and workplace requirements.
 - 1.4 Select and fit required personal protective equipment (PPE).
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select tools and equipment, check for serviceability and rectify or report any faults.
- 2 Carry out concrete cutting activities.
- 2.1 Inspect concrete to assess its readiness for cutting and to prevent raveling, cracking and saw damage.
 - 2.2 Conduct required measurements and calculations and mark cutting positions according to specifications.
 - 2.3 Use tools and equipment safely to perform trial cuts according to manufacturer and workplace requirements.
 - 2.4 Cut concrete according to specifications and quality requirements.
 - 2.5 Control dust from concrete cutting activities according to workplace requirements.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials according to regulatory and workplace requirements.
 - 3.2 Clean, check, maintain and store tools and equipment according to manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCCCO3047 Cut and core concrete.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3047 Cut concrete

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is not equivalent to CPCCCO3047 Cut and core concrete.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by cutting concrete on two different occasions involving, on each occasion:

- saw-cutting one joint to a horizontal concrete surface to a minimum of five metres straight or to the set line.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations and Australian Standards relevant to concrete cutting tasks:
 - environmental protection and waste disposal
 - specified tolerances
 - work health and safety (WHS)
- concrete cutting processes and techniques:
 - soft cutting
 - expansion cutting
- cutting methods that can cause excessive blade wear, raveling and cracking
- factors to consider when assessing the readiness of concrete for cutting to avoid raveling, cracks and saw damage including the effects of weather and climate
- health risks associated with silica dust exposure
- purpose and importance of construction, contraction, control and expansion joints:
 - doweling systems
 - installation methods
 - role in the long-term serviceability of concrete pavements
- typical hazards associated with concrete cutting using concrete and masonry saws, and risk control methods for each:
 - blade fracture
 - electrocution

- saw kick-back, push-back and pull-in
- silica dust
- toxic fumes
- uses, maintenance and limitations of tools and equipment used to cut concrete
- workplace requirements for cutting concrete:
 - cleaning up the work area
 - maintaining and storing tools and equipment
 - quality
 - reporting problems
 - safety requirements including dust suppression and personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, concrete, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3048 Construct tilt panels on site

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3048 Construct tilt panels on site.

Application

This unit of competency specifies the skills and knowledge required to work in a team to set up, pour and place concrete tilt panels to form internal and external walls for building structures. It includes on-site and prefabricated methods of panel construction.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare to construct tilt panels on | 1.1 Interpret tilt panel design specifications and drawings and clarify construction requirements with relevant |
|--|---|

- site.
- persons.
- 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select and fit required personal protective equipment (PPE).
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
 - 1.6 Calculate and acquire material quantities to meet task specifications and safely locate materials ready for use.
- 2 Set out and construct temporary casting bed.
- 2.1 Select suitable area to construct casting bed in accordance with work instructions.
 - 2.2 Prepare ground to a flat surface in readiness for casting bed.
 - 2.3 Place and finish casting bed to meet work instructions.
 - 2.4 Coat casting bed with bond breaker in accordance with product specifications.
- 3 Set out work and prepare formwork for panel.
- 3.1 Set out location and size of tilt panel in accordance with drawings and specifications.
 - 3.2 Prepare, place and fix tilt panel edge formwork, and plumb and align to specifications.
 - 3.3 Apply bond breaker to casting bed face or casting form face of previous panel to ensure ease of panel separation, in accordance with manufacturer requirements for dose and quantity.
 - 3.4 Apply form release agent to formwork in accordance with specifications.
- 4 Place and tie
- 4.1 Check reinforcement, accessories and cast-in fittings for

reinforcement and cast-in fittings		conformity with design and engineering specifications.
	4.2	Position reinforcement, accessories and cast-in fittings in accordance with engineering drawings and specifications.
	4.3	Tie reinforcement in correct placement in accordance with engineering drawings and specifications.
5 Place, finish and cure concrete.	5.1	Place concrete evenly and consolidate to specification using approved vibration method.
	5.2	Screed and finish concrete surface to specification ensuring cast-in fittings are clear.
	5.3	Apply required curing process.
	5.4	Strip edge formwork after final panel is cast, ensuring no damage to panels.
6 Clean up.	6.1	Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
	6.2	Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3048 Construct tilt panels on site.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3048 Construct tilt panels on site

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCO3048 Construct tilt panels on site.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by constructing tilt panels on site involving:

- constructing a casting bed for one tilt panel measuring at least 20 square metres
- constructing a formwork box for one tilt panel measuring at least 20 square metres
- constructing one tilt panel using a casting bed
- constructing one tilt panel using a formwork box.

The constructed tilt panels must include two of the following:

- blockouts
- door and window penetrations
- raking edges
- waterproofing and decorative rebates.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations and Australian Standards relevant to tilt panel construction tasks:
 - environmental protection and waste disposal
 - work health and safety (WHS)
- drawings and specifications used to interpret requirements for constructing tilt panels on site
- effects of weather and climatic conditions on the properties of concrete:
 - detrimental effect of water addition to concrete properties
 - precautions that should be taken to minimise any potential adverse effects when placing and curing concrete
- formwork and reinforcing techniques and componentry for tilt panels
- health risks associated with silica dust exposure

- processes for placing, finishing and curing concrete:
 - approved vibration methods
 - concreting levelling techniques
- techniques and processes for lifting inserts and positioning ferrules
- tensile strength of concrete panels
- tilt panel construction materials and techniques
- types, characteristics, uses and limitations of plant, tools and equipment used when constructing tilt panels on site
- workplace requirements for constructing tilt panels on site:
 - cleaning up the work area
 - maintaining and storing materials, plant, tools and equipment
 - quality
 - reporting problems
 - safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, work sites, materials, plant, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3049 Apply and finish sprayed concrete

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3049 Apply and finish sprayed concrete.
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Application

This unit of competency specifies the skills and knowledge required to apply and finish pre-mixed concrete using wet and dry spraying methods. Sprayed concrete has application where conventional concreting methods cannot be used such as for barrel vaulting, caissons, canal linings, diaphragm walls, drainage channels, irrigation systems, piled wall facings, reservoirs, shell roofs and domes, silo structures, tunnel linings, walls and water towers. The unit does not cover the application of sprayed concrete to shape and finish swimming pool and spa shells.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing work tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare to apply and finish sprayed concrete.	<p>1.1 Interpret specifications for concrete spraying and clarify requirements with relevant persons.</p> <p>1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.</p> <p>1.3 Select and fit required personal protective equipment (PPE).</p> <p>1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.</p> <p>1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults.</p> <p>1.6 Calculate and acquire material quantities to meet task specifications and safely locate materials ready for use.</p> <p>1.7 Check that material properties and slump meet specification and take any actions required to ensure compliance.</p>
2 Carry out concrete spraying and finishing activities.	<p>2.1 Prepare pumping equipment for delivery of concrete mix to spray nozzle.</p> <p>2.2 Check reinforcement to ensure it is away from the structure where concrete is to be applied.</p> <p>2.3 Apply concrete to surface using required spray method within specified tolerances.</p> <p>2.4 Shape and finish sprayed concrete to required form in accordance with work specifications.</p>
3 Clean up.	<p>3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.</p> <p>3.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.</p>

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3049 Apply and finish sprayed concrete.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3049 Apply and finish sprayed concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3049 Apply and finish sprayed concrete.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying and finishing sprayed concrete in two different projects:

- each project must involve a minimum of 10 square metres of concrete
- wet and dry spraying concreting methods must be used across the two projects.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- basic science of concrete involving cement chemical reaction (hydration) dependent on water content, temperature and time:
 - effect on plastic state performance:
 - benefits and non-benefits of admixture types and doses
 - plastic shrinkage cracking risk
 - effect on hardened state performance:
 - early age and later age strength development
 - drying shrinkage and cracking
- compliance requirements of legislation, regulations and Australian Standards relevant to concrete spraying tasks:
 - environmental protection and waste disposal
 - material specifications and tolerances
 - work health and safety (WHS)
- effects of temperature, wind and low humidity on the properties of concrete:
 - detrimental effect of water addition to concrete properties
 - precautions that should be taken to minimise any potential adverse effects when applying and finishing sprayed concrete
- health risks associated with silica dust exposure
- methods for checking that material properties meet specifications:

- slump
- water to cement ratios
- processes for applying and finishing sprayed concrete using wet and dry spraying methods:
 - dense flow process
 - mixing, transporting and placing sprayed concrete
 - thin flow process
- types, characteristics, uses and limitations of plant, tools, equipment and materials used to apply and finish sprayed concrete
- typical uses and applications of sprayed concrete
- workplace requirements for applying and finishing sprayed concrete:
 - cleaning up the work area
 - maintaining and storing materials, plant, tools and equipment
 - quality
 - reporting problems
 - safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, work sites, materials, plant, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3050 Carry out high-performance concreting

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3050 Carry out high performance concreting.
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Application

This unit of competency specifies the skills and knowledge required to place high-performance concrete onto structures requiring high-strength attributes and durability. It applies to concrete work on structures such as bridges, airport runways, dams, cooling towers, foundation supports for high-rise facilities, roadways and tunnels.

A person who has achieved this unit of competency is expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements may apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to	1.1 Interpret specifications for high-performance concreting
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- carry out high-performance concreting.
- 1.2 tasks and clarify requirements with relevant persons.
 - 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select and fit required personal protective equipment (PPE).
 - 1.4 Inspect worksite, identify hazards, assess risks and apply risk controls, including required signage and barricades.
 - 1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
 - 1.6 Calculate and acquire material quantities to meet task specifications and safely locate materials ready for use.
- 2 Place, finish and cure high-performance concrete.
- 2.1 Carry out tests to check required properties of high-performance concrete in accordance with specifications and relevant standards.
 - 2.2 Use appropriate mechanical or manual handling techniques and processes to discharge high-performance concrete into formwork.
 - 2.3 Use required technique to ensure high-performance concrete is placed in a timely manner to avoid material segregation in accordance with specifications.
 - 2.4 Compact or vibrate high-performance concrete and screed into designated formwork in accordance with specifications and supporting drawings.
 - 2.5 Finish high-performance concrete to specified thickness and height.
 - 2.6 Apply and document high-performance concrete curing regime in accordance with specifications.
 - 2.7 Use plastic membrane to protect concrete from damage and pollution during construction.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.

- 3.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3050 Carry out high performance concreting

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3050 Carry out high-performance concreting

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3050 Carry out high performance concreting.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by placing, finishing and curing five different surfaces using high early strength concrete with chemical additives, each surface measuring at least 10 square metres.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations and Australian Standards relevant to high-performance concreting tasks:
 - environmental protection and waste disposal
 - testing required to check concrete properties
 - work health and safety (WHS)
- health risks associated with silica dust exposure
- importance of correct placement of concrete to ensure concrete durability, strength, class of finish and self-compacting properties are not impacted
- processes for placing, finishing and curing high-performance concrete using:
 - approved vibration methods
 - high-performance concrete with a range of compressive strengths, including 100 megapascals (MPa)
- types, characteristics, uses and limitations of plant, tools, equipment and materials used to carry out high-performance concreting
- typical uses and applications for high-performance concreting
- workplace requirements for carrying out high-performance concreting:
 - cleaning up the work area
 - maintaining and storing plant, tools and equipment
 - quality
 - reporting problems

- safety requirements, including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, sites, materials, plant, tools and equipment required to achieve the performance criteria and performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3051 Conduct off-form vertical concrete operations

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3051 Conduct off-form vertical concrete operations.
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Application

This unit of competency specifies the skills and knowledge required to prepare and apply concrete to slip-form or jump-form structures in the construction of multi storey buildings. It includes sequencing, placing and compacting concrete in formwork.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to conduct off-form	1.1 Interpret drawings and specifications for off-form vertical concrete operations and clarify requirements
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- vertical concrete operations.
- with relevant persons.
- 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select and fit required personal protective equipment (PPE).
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
 - 1.6 Calculate and acquire material quantities to meet task specifications and safely locate materials ready for use.
- 2 Set out and prepare slip-form or jump-form location.
- 2.1 Set out location and size of pour in accordance with drawings and specifications.
 - 2.2 Prepare equipment specifically associated with slip-formwork or jump-formwork installation.
 - 2.3 Prepare, place and fix edge formwork with plumb and align to specifications.
 - 2.4 Use required equipment to apply form release agent to slip -formwork or jump-formwork in accordance with specifications.
- 3 Place and tie reinforcement and cast-in fittings.
- 3.1 Check reinforcement, accessories and cast-in fittings for conformity with drawings and specifications.
 - 3.2 Position reinforcement and accessories in accordance with engineering drawings and specifications.
 - 3.3 Tie reinforcement in correct placement in accordance with engineering drawings and specifications.
- 4 Place, finish and cure concrete.
- 4.1 Determine sequencing of concrete from specifications.
 - 4.2 Place concrete evenly into formwork in layers and consolidate to specification, avoiding material

- segregation and using approved compaction method.
- 4.3 Screed and finish concrete surface to specification ensuring cast-in fittings are clear.
 - 4.4 Add curing compound in accordance with specifications.
 - 4.5 Continue placement cycle after slip-form or jump-form formwork is progressed by riggers, avoiding cold joint.
- 5 Clean up.
- 5.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 5.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3051 Conduct off-form vertical concrete operations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3051 Conduct off-form vertical concrete operations

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3051 Conduct off-form vertical concrete operations.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting two different off-form vertical concrete operations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations and Australian Standards relevant to off-form vertical concrete operations
 - environmental protection and waste disposal
 - material specifications and tolerances
 - work health and safety (WHS)
- health risks associated with silica dust exposure
- processes for conducting off-form vertical concrete operations in conjunction with other personnel involved in the slip-form or jump-form process:
 - carpenters
 - electricians
 - other concreters
 - riggers
 - steel fixers
- processes for placing, finishing and curing concrete including approved compaction methods
- types, characteristics, uses and limitations of plant, tools, equipment and materials required for off-form vertical concrete operations
- types, purpose and application of release agents used in vertical concrete operations
- typical uses of slip-form and jump-form formwork in vertical concrete operations
- workplace requirements for conducting off-form vertical concrete operations:
 - cleaning up the work area

- maintaining and storing materials, plant, tools and equipment
- quality
- reporting problems
- safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, drawings, specifications, work sites, materials, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3052 Conduct concrete boom delivery operations

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCO3052 Conduct concrete boom delivery operations

Application

This unit of competency specifies the skills and knowledge required to support construction projects by conducting concrete boom delivery operations using a vehicle-borne pumping system. It covers systems with a minimum of two boom stages.

It includes:

- conducting operational checks
- safe and effective operation of the vehicle and pumping system
- safe establishment, use and monitoring of the boom distribution system
- conducting operator maintenance and work finalisation activities.

This unit of competency supports the role of those who deliver concrete placing booms to residential, commercial or civil construction sites, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.*

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to conduct concrete boom delivery operations.	1.1 Interpret work instructions, plans and specifications for concrete boom delivery operations and clarify requirements with relevant persons.
	1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.
	1.3 Select and fit personal protective equipment appropriate for work activities.
	1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
	1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
2 Conduct concrete boom delivery system pre-operational checks.	2.1 Carry out pre-start, start-up, park and shut-down including emergency shut-down procedures on vehicle and pump in accordance with manufacturer and site requirements.
	2.2 Check vehicle controls and functions for serviceability and rectify or report faults.
	2.3 Check distribution system components prior to use in accordance with workplace requirements.
	2.4 Clean and service hoppers prior to use in accordance with workplace requirements.
3 Operate concrete boom delivery vehicle.	3.1 Identify hazards associated with vehicle positioning and operations and use safe operating techniques to minimise risk.
	3.2 Manage engine power to ensure efficiency of concrete pump vehicle platform movements and to minimise damage to engine and gears.

- 3.3 Coordinate engine power with gear selection ensuring smooth transition and operation within torque range.
 - 3.4 Operate vehicle in accordance with work instructions and workplace requirements.
 - 3.5 Monitor road and traffic conditions accounting for traffic flow, distance and load, and ensuring no injury to people or damage to property, equipment or load.
 - 3.6 Bring truck to a halt smoothly using engine retarder, gears and brakes to minimise vehicle wear and tear.
- 4 Deliver concrete with concrete boom delivery system.
 - 4.1 Identify and assess hazards associated with positioning and operating boom delivery components and use safe operating procedures to minimise risk.
 - 4.2 Position boom delivery vehicle at site to best service delivery task and provide access to concrete-supply vehicle.
 - 4.3 Prepare, deploy and check delivery platform stabilisers to manufacturer requirements for operation and safety.
 - 4.4 Check and position delivery system components securely and safely, in accordance with manufacturer requirements.
 - 4.5 Test-run pumping systems and prepare for use in accordance with manufacturer requirements.
 - 4.6 Coordinate safe supply of bulk concrete mix to the hopper with supply vehicle operator.
 - 4.7 Operate boom delivery system and vary its positioning to maintain concrete delivery to the required destination.
 - 4.8 Withdraw boom delivery system safely at completion of delivery task.
- 5 Carry out operator maintenance of concrete boom delivery vehicle.
 - 5.1 Park boom delivery vehicle safely, prepare for maintenance and shut down in accordance with manufacturer and workplace requirements.
 - 5.2 Carry out basic diagnostic procedures on vehicle, pump and boom system components in accordance with

- manufacturer requirements, and record outcomes in accordance with workplace requirements.
- 5.3 Remove and replace defective parts safely and effectively in accordance with manufacturer and workplace requirements.
 - 5.4 Carry out regular scheduled maintenance tasks in accordance with manufacturer and workplace requirements.
- 6 Clean up.
- 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 6.2 Clean, check, maintain and store vehicle, plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to interpret non-verbal communication such as hand signals.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3052 Conduct concrete boom delivery operations

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3052 Conduct concrete boom delivery operations

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3052 Conduct concrete boom delivery operations

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by conducting concrete boom delivery operations at two different sites.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- workplace and regulatory requirements for conducting concrete boom delivery operations under applicable Commonwealth, state or territory work health and safety (WHS) legislation, Australian Standards and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage
 - environmental and work site safety plans
 - workplace and equipment safety requirements, including hazard reporting requirements and correct handling of equipment faults
 - reporting problems
- plans and specifications used to interpret requirements for conducting concrete boom delivery operations
- characteristics, technical capabilities and limitations of concrete boom delivery vehicle systems:
 - adaptors
 - boom components
 - hoses
 - boom-mounted conveyors
 - lines

- concrete boom delivery vehicle systems processes:
 - operational, maintenance and basic diagnostic procedures and use of hand tools
 - pumps and pumping system operations
 - safe operating techniques in all terrain
 - boom and line establishment techniques and operation of delivery system
 - construction activity sequences relating to bulk concreting operations
- concrete mixes:
 - block-fill
 - pool-mix
 - topping
 - slab
 - footing
 - curb and guttering
- site and equipment safety requirements:
 - knowing when and how to activate emergency shut-down procedures
 - overhead safety requirements relating to boom operations
 - site isolation and traffic control responsibilities and authorities
 - requirements for shut down, inspection, minor maintenance and repairs, and regular scheduled maintenance in accordance with manufacturer requirements
- requirements for cleaning up the work area, vehicle, plant, tools and equipment, and materials storage and environmentally friendly waste management.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in performance evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3053 Slump-test concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3053 Slump test concrete.

Application

This unit of competency specifies the skills and knowledge required to slump-test concrete to ensure that the mix is workable and complies with the delivery docket and specified order. It includes sampling and slump-testing supplied concrete.

A person who has achieved this unit of competency is expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements may apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare to slump-test concrete. | 1.1 Interpret concrete specifications and clarify slump requirements in consultation with relevant persons. |
|--|---|

- 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select tools and equipment for slump-testing, check for serviceability and rectify or report any faults.
 - 1.4 Select and fit required personal protective equipment (PPE).
 - 1.5 Inspect worksite, identify hazards, assess risks and apply risk controls, including required signage and barricades.
 - 1.6 Clean slumping cone in preparation for slump testing.
- 2 Conduct slump test.
- 2.1 Take sample of concrete in accordance with relevant Australian Standard and test for consistency, directly from the delivery truck and after discharge of initial 0.2 cubic metres.
 - 2.2 Level off slumping cone and clear surplus concrete from steel plate and slumping cone.
 - 2.3 Raise slumping cone without moving sample.
 - 2.4 Measure sample for conformity with tolerance levels and carry out re-sampling when sample is outside tolerance.
 - 2.5 Record collapsed or sheared samples and communicate results to relevant persons.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3053 Slump test concrete.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3053 Slump-test concrete

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3053 Slump test concrete.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by slump-testing two different concrete samples to determine if the mix is workable and complies with the delivery docket and specified order:

- 80 slump plus or minus 15
- 100 slump plus or minus 20.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations, codes and Australian Standards relevant to slump-testing:
 - environmental protection and waste disposal
 - methods of testing concrete in accordance with the current Australian Standard for determining properties related to the consistency of concrete – slump flow, T500 and J-ring test
 - work health and safety (WHS)
- health risks associated with silica dust exposure
- purpose and importance of slump-testing and the impact to concrete strength and durability of adding water on site:
 - drying, shrinkage
 - early age strength
 - density
 - cracking
 - discolouration
- specifications used to interpret slump tolerance levels and conformance
- techniques for conducting slump tests
- tools and equipment used for slump-testing concrete:
 - bullet-nosed rod (600 mm x 16 mm)
 - sampling scoops

- standard slump cones
- steel rule
- steel slump plate (500 mm x 500 mm)
- steel rod
- workplace requirements for slump-testing concrete:
 - cleaning up the work area
 - maintaining and storing tools and equipment
 - quality
 - reporting problems
 - safety requirements, including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, materials, tools and equipment required to achieve the performance criteria and performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3054 Operate concrete agitator trucks

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCCO3054 Operate concrete agitator trucks.

Application

This unit of competency specifies the skills and knowledge required to operate concrete agitator trucks. It includes safely operating, positioning and manoeuvring the truck to load, transport and discharge concrete mix at the work site. It requires conducting pre-operational checks and driver maintenance.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency. Candidates must hold a current, nationally recognised licence required to operate the concrete agitator truck. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to operate concrete agitator truck.
 - 1.1 Interpret work instructions for concrete agitator truck operation and clarify requirements with relevant persons.
 - 1.2 Plan work tasks to comply with relevant legislation, regulations, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Identify hazards associated with planned concrete agitator truck operation and apply risk controls in accordance with regulatory and workplace requirements.
 - 1.4 Select hand tools and maintenance equipment associated with truck, check for serviceability and rectify or report any faults.
 - 1.5 Select and fit required personal protective equipment (PPE).

- 2 Conduct concrete agitator truck pre-operational checks.
 - 2.1 Carry out truck pre-start, start-up, park and shut-down procedures including emergency shut-down in accordance with manufacturer and site requirements.
 - 2.2 Check truck controls and functions for serviceability and rectify or report faults.
 - 2.3 Check agitator controls and functions for serviceability and rectify or report faults.

- 3 Operate concrete agitator truck.
 - 3.1 Manage engine power to ensure efficient truck movements and to minimise damage to engine and gears.
 - 3.2 Coordinate engine power with gear selection ensuring smooth transition and operation within torque range.
 - 3.3 Drive truck safely in accordance with regulatory and workplace requirements.
 - 3.4 Monitor road and traffic conditions and adjust truck operation as required to ensure safety.
 - 3.5 Bring truck to a halt smoothly using engine retarder, gears and brakes to minimise truck wear and tear.

- | | | | |
|---|---|-----|---|
| 4 | Load, transport and discharge concrete. | 4.1 | Position truck at load and discharge points with minimum manoeuvres. |
| | | 4.2 | Load truck with concrete mix specified for the job, and with volume or weight of load within authorised carrying capacity of agitator. |
| | | 4.3 | Move truck from loading to discharge point safely and smoothly avoiding surge and sway. |
| | | 4.4 | Discharge concrete in accordance with work instructions. |
| | | 4.5 | Monitor and maintain discharge systems including chutes and adaptors throughout operations. |
| 5 | Carry out operator maintenance. | 5.1 | Park truck safely, prepare for maintenance, and shut down in accordance with manufacturer and workplace requirements. |
| | | 5.2 | Carry out basic diagnostic procedures on truck and agitator components and record results in accordance with manufacturer and workplace requirements. |
| | | 5.3 | Remove and replace defective parts safely and effectively in accordance with manufacturer and workplace requirements. |
| | | 5.4 | Carry out regular scheduled maintenance tasks in accordance with manufacturer and workplace requirements. |
| 6 | Clean up. | 6.1 | Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. |
| | | 6.2 | Clean, check, maintain and store truck, bowl, tools and equipment in accordance with manufacturer and workplace requirements. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3054 Operate concrete agitator trucks.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3054 Operate concrete agitator trucks

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3054 Operate concrete agitator trucks.
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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by operating a concrete agitator truck over three shifts involving two different work sites.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics of concrete carried in concrete agitator trucks
- compliance requirements of legislation, regulations and codes relevant to concrete agitator truck operation:
 - environmental protection and waste disposal
 - licensing for truck operation
 - work health and safety (WHS)
- operational and maintenance requirements of concrete agitator truck:
 - basic diagnostic procedures
 - how and when to activate emergency shut-down procedures
 - key components and controls and their functions
 - operator maintenance procedures
 - pre-start, start-up, park and shut-down
 - techniques for positioning truck at load and discharge points
- processes for loading, transporting and discharging concrete:
 - authorised carrying capacity of agitator
 - methods for avoiding surge and sway
- workplace requirements for operating concrete agitator truck:
 - cleaning up the work area
 - maintaining and storing tools and equipment
 - reporting problems

- safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, concrete agitator truck and associated tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3055 Install topping slabs

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence and Knowledge Evidence corrected.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCCO3055 Install topping slabs.

Application

This unit of competency specifies the skills and knowledge required to install bonded and unbonded topping slabs to existing concrete. It includes grinding and scabbling preparation techniques.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to install topping slab.
 - 1.1 Interpret specifications for topping slab installation and clarify requirements with relevant persons.
 - 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select and fit required personal protective equipment (PPE).
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
 - 1.6 Calculate and acquire material quantities to meet task specifications and safely locate materials ready for use.

- 2 Prepare concrete for topping slab.
 - 2.1 Consult with relevant persons to determine need for concrete reinforcement and install any required reinforcement in accordance with specifications.
 - 2.2 Select and check equipment required to prepare concrete for topping slab.
 - 2.3 Scarify existing concrete using appropriate preparation techniques in accordance with specifications.
 - 2.4 Clear loose particles and debris from surface to be topped.
 - 2.5 Check existing joints in substrate to ensure they are carried through and reflected in proposed topping.

- 3 Pour topping slab.
 - 3.1 Prepare existing concrete surface for topping slab with bonded topping or separation material in accordance with specifications.
 - 3.2 Pour topping slab onto existing concrete surface and screed to specifications.

- 4 Cure and seal topping
 - 4.1 Use setting and apply curing agents and techniques to

- slab. topping slab in accordance with specifications.
- 4.2 Maintain curing and sealing for period stated in specifications.
- 5 Clean up.
- 5.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
- 5.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3055 Install topping slabs.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3055 Install topping slabs

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence and Knowledge Evidence corrected.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCCO3055 Install topping slabs.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by installing:

- bonded topping slabs to two concrete slabs, each measuring at least 10 square metres
- unbonded topping slabs to two concrete slabs, each measuring at least 10 square metres.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations and Australian Standards relevant to topping slab installation:
 - environmental protection and waste disposal
 - material specifications and tolerances
 - work health and safety (WHS)
- concrete resurfacing materials and techniques:
 - curing duration and effect on ultimate strength
 - role of abrasive blasting when installing bonded topping slabs
 - properties of concrete to be able to minimise waste, delay and faults in installed topping slabs
- health risks associated with silica dust exposure
- processes for installing bonded and unbonded topping slabs
- types and applications of concrete materials used when installing topping slabs
- types, characteristics, uses and limitations of plant, tools and equipment used when installing topping slabs
- workplace requirements for installing topping slabs:
 - cleaning up the work area

- maintaining and storing materials, plant, tools and equipment
- quality
- reporting problems
- safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, work sites, materials, plant, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3056 Conduct concrete pump delivery operations

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Criteria 3.1 rectified.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to support construction projects by conducting concrete pump delivery operations using a vehicle-borne pumping system. It includes operating the concrete pump delivery vehicle, delivering concrete using the pump system and carrying out required operator checks and maintenance.

This unit covers work usually done by the line or hose-hand and does not include boom operations requiring a licence to conduct high-risk work.

A person who has achieved this unit of competency is expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency. Candidates must hold a current, nationally recognised licence required to operate the concrete pump delivery vehicle. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to conduct concrete pump delivery operations.	1.1 Interpret work instructions and specifications for concrete pump delivery operations and clarify requirements with relevant persons.
	1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
	1.3 Select and fit required personal protective equipment (PPE).
	1.4 Inspect worksite, identify hazards, assess risks and apply risk controls, including required signage and barricades.
	1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
2 Conduct concrete pump delivery system pre-operational checks.	2.1 Carry out pre-start, start-up, park and shut-down procedures, including emergency shutdown on vehicle and pump in accordance with manufacturer and site requirements.
	2.2 Check vehicle controls and functions for serviceability and rectify or report faults.
	2.3 Check distribution system components prior to use in accordance with workplace requirements.
	2.4 Clean and service hoppers prior to use in accordance with workplace requirements.
3 Operate concrete pump delivery vehicle.	3.1 Identify hazards and assess risks associated with vehicle positioning and operations and use safe operating techniques to minimise risk.
	3.2 Manage engine power to ensure efficiency of concrete pump vehicle platform movements and to minimise damage to engine and gears.
	3.3 Coordinate engine power with gear selection ensuring smooth transition and operation within torque range.

- 3.4 Operate vehicle in accordance with work instructions and workplace requirements.
 - 3.5 Monitor road and traffic conditions accounting for traffic flow, distance and load, and ensuring no injury to people or damage to property, equipment or load.
 - 3.6 Bring vehicle to a halt smoothly using engine retarder, gears and brakes to minimise vehicle wear and tear.
- 4 Deliver concrete with concrete pump system.
 - 4.1 Identify hazards and assess risks associated with positioning and operating pump delivery components and use safe operating procedures to minimise risk.
 - 4.2 Position pump delivery vehicle at site to best service delivery task and provide access to concrete-supply vehicle.
 - 4.3 Prepare, deploy and check delivery platform stabilisers in accordance with manufacturer requirements for operation and safety.
 - 4.4 Check and position delivery system components securely and safely, in accordance with manufacturer requirements.
 - 4.5 Test-run pumping systems and prepare for use in accordance with manufacturer requirements.
 - 4.6 Coordinate with supply vehicle operator, safe supply of bulk concrete mix to hopper.
 - 4.7 Operate pump delivery system and vary positioning to maintain concrete delivery to required destination.
 - 4.8 Withdraw pump delivery system safely at completion of delivery task.
- 5 Carry out operator maintenance.
 - 5.1 Park vehicle safely, prepare for maintenance and shutdown in accordance with manufacturer and workplace requirements.
 - 5.2 Carry out basic diagnostic procedures on vehicle and pump system components in accordance with manufacturer requirements and record outcomes.

- 5.3 Remove and replace defective parts safely and effectively in accordance with manufacturer and workplace requirements.
 - 5.4 Carry out regular scheduled maintenance tasks in accordance with manufacturer and workplace requirements.
- 6 Clean up.
- 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 6.2 Clean, check, maintain and store vehicle, bowl, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3056 Conduct concrete pump delivery operations

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Criteria 3.1 rectified.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by conducting concrete pump delivery operations at two different sites.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics, technical capabilities and limitations of concrete pump delivery vehicle systems:
 - adaptors
 - construction activity sequences relating to bulk concreting operations
 - line establishment techniques and operation of delivery system
 - pumps and pumping system operations
 - hoses
 - lines
- compliance requirements of legislation, regulations, codes and Australian Standards relevant to concrete pump delivery operations:
 - environmental protection and waste disposal
 - work health and safety (WHS)
- concrete mixes:
 - block-fill
 - pool-mix
 - topping
 - slab
 - footing

- curb and guttering
- health risks associated with silica dust exposure
- operational and maintenance requirements of concrete pump delivery systems:
- basic diagnostic procedures
 - how and when to activate emergency shut-down procedures
 - key components and controls and their functions
 - operator maintenance procedures
 - pre-start, start-up, park and shut-down
 - techniques for positioning pumping system to best deliver concrete
- plans and specifications used to interpret requirements for concrete pump delivery
- workplace requirements for conducting concrete pump delivery operations:
 - cleaning up the work area
 - maintaining and storing materials, plant, tools and equipment
 - quality
 - reporting problems
 - safety requirements, including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, vehicle, concrete pump delivery system, materials, tools and equipment required to achieve the performance criteria and performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCON3057 Core concrete

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to safely core concrete. It requires setting up and using core drilling systems to drill holes in concrete to specification.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to core concrete.
 - 1.1 Interpret plans and specifications for concrete coring and clarify requirements with relevant persons.
 - 1.2 Assess work site to determine concrete type, thickness, reinforcement and base type impacting coring requirements.
 - 1.3 Plan work tasks to comply with relevant legislation, regulations, standards and codes, and manufacturer, work health and safety (WHS), environmental and workplace requirements.
 - 1.4 Select and fit required personal protective equipment (PPE).
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select and set up core drilling system appropriate to the task, check for serviceability and rectify or report any faults.
 - 1.7 Select and attach drill motor and drill bit appropriate to the task according to manufacturer and workplace requirements.

- 2 Carry out concrete coring activities.
 - 2.1 Conduct measurements and calculations to correctly set out and mark up drill hole according to specifications.
 - 2.2 Identify core plug removal and securing method according to workplace requirements.
 - 2.3 Drill hole in concrete according to specifications, manufacturer and workplace requirements.
 - 2.4 Monitor drilling system to ensure correct and safe operation according to manufacturer and workplace requirements.
 - 2.5 Remove core plug safely according to workplace requirements.

- 3 Clean up.
 - 3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.

- 3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3057 Core concrete

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by coring concrete on two different occasions including coring one hole in a vertical concrete surface, clear through a minimum of 100 millimetres in depth.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of legislation, regulations, codes and Australian Standards relevant to concrete coring tasks:
 - environmental protection and waste disposal
 - tolerances for alignment associated with core drilling diameters and lengths
 - work health and safety (WHS)
- concrete coring processes and techniques:
 - setting out and marking up drill holes
 - methods for safely securing and removing plugs
- core drilling system components and applications:
 - diamond drill bit
 - drilling accessories
 - drill motor
 - drill stand
- typical hazards associated with concrete coring using drilling systems, and risk control methods for each:
 - electrocution
 - silica dust exposure
 - toxic fumes

- workplace requirements for coring concrete:
 - cleaning up the work area
 - maintaining and storing tools and equipment
 - quality
 - reporting problems
 - safety requirements including dust suppression and personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, concrete, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPA3001 Prepare subgrade, base and bedding course for segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3001A Prepare subgrade, base and bedding course for segmental paving. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to use various materials to prepare subgrade, base and bedding courses in preparation for laying segmental paving. It includes identifying soil types, determining levels and grades, calculating material and screeding and compacting base materials.

This unit applies to those who pave external areas on new and existing sites. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan the work.
 - 1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 1.2 Read and interpret subgrade, base and bedding material requirements from current plans, specifications, standards and codes.
 - 1.3 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.4 Identify type and class of soil using soil charts and determine its properties.
 - 1.5 Determine subgrade requirements from penetration test results.
 - 1.6 Calculate material quantities using measurements and formulas.
 - 1.7 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.8 Identify underground services and potential hazards and determine and implement control measures.
 - 2 Prepare for work.
 - 2.1 Select and check condition of equipment and tools and report any damage or faults to relevant person.
 - 2.2 Check conformity of materials against the specifications and place materials in preparation for the work.
 - 2.3 Identify drainage needs and apply remedial action.
 - 2.4 Identify termite barriers and damp-proof courses and ensure integrity is maintained and not compromised during paving construction.
 - 3 Excavate the site and install base course.
 - 3.1 Set out finish height of pavers, grades and excavation depth according to plan and specifications.
 - 3.2 Calculate the bulking factor for different soil types.
 - 3.3 Remove top soil, weeds and their roots.

	3.4	Excavate site to required depth and remove spoil using appropriate equipment.
	3.5	Distribute and compact base material.
4 Install bedding course material.	4.1	Install geotextile material as a drainage or a separation layer.
	4.2	Stabilise bedding course for area with slopes of greater than 1:15 and install transverse concrete supports for driveways with a sloping pavement of greater than 5 metres.
	4.3	Distribute and compact bedding material.
5 Screed base material.	5.1	Screed bedding material to set out heights.
	5.2	Remove excess material.
6 Clean up.	6.1	Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
	6.2	Clean tools and equipment, check for serviceability and report damage or faults.
	6.3	Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCPA3001A Prepare subgrade, base and bedding course for segmental paving

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPA3001 Prepare subgrade, base and bedding course for segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3001A Prepare subgrade, base and bedding course for segmental paving. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by preparing an area of a minimum of 2.0 m x 3.0 m for segmental paving.

In doing this, the candidate must:

- excavate the area to be paved using manual and mechanical means
- install suitable surface and subsoil drainage
- compact subgrade, based and bedding courses to required compaction specifications
- screed bedding material flat and avoid any ponding.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of approved paving materials:
 - various bedding materials
 - types of segmental pavers
 - waterproofing materials
 - geotextile materials
 - mortar ingredients and consistency
- soil types
- processes and techniques relating to paving:
 - manual and mechanical excavation
 - compacting subgrades, bases and bedding courses
 - stabilising bedding sand
 - laying of various paving patterns
- terminology relating to paving
- principles of California bearing ratio (CBR)
- brick and paver expansion, and control and articulation joints

- functional and operational features of plant, equipment and hand and power tools:
 - skid steer loader
 - backhoe
 - excavator
 - plate compactors
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - overhead and underground hazards
 - operating excavation and compacting equipment
 - exposure to silica
 - exposure to loud noise
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal
- specifications relating to preparing subgrades, bases and bedding for paving.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPA3002 Lay segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3002A Lay segmental pavers. Minor title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to lay segmental pavers on prepared subgrade and base. It applies to people who set out and lay a range of segmental pavers to external areas of new and existing sites.

This unit is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read, interpret and apply laying segmental paving requirements from current plans, specifications, standards and codes.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures relevant to work activity.
 - 1.4 Use measurements and apply formulas to calculate material quantities.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
- 2 Prepare for work.
- 2.1 Select and check condition of equipment and tools and report any damage or faults to relevant person.
 - 2.2 Check conformity of materials and pavers for fit for purpose, size, dimension, colour and imperfections.
 - 2.3 Stack rejected pavers aside to use for cuts.
 - 2.4 Stack pavers in preparation for the work.
- 3 Lay pavers.
- 3.1 Set out stringline grid squares to establish guide levels and lines.
 - 3.2 Lay pavers to design pattern with localised stresses between adjacent pavers reduced.
 - 3.3 Check, adjust and maintain allowable tolerances during laying of pavers.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCPA3002A Lay segmental pavers

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPA3002 Lay segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3002A Lay segmental pavers. Minor title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by laying segmental paving, to a specified design, to an area of a minimum of 2.0 m x 3.0 m.

In doing this, the candidate must:

- lay specified pavers to a flat surface avoiding ponding
- maintain equal joints and spacing to allowable tolerances stated in manufacturer's specifications.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of approved paving materials:
 - various bedding materials
 - types of segmental pavers
 - waterproofing materials
 - geotextile materials
 - mortar ingredients and consistency
- processes and techniques relating to paving:
 - stabilising bedding sand
 - laying of various paving designs and patterns
 - efficient laying practices:
 - with consideration of direction of fall or slope of job
 - good access to materials
 - minimising cuts
 - working around existing structures and penetrations
- construction terminology relating to paving

- brick and paver expansion and, control and articulation joints
- functional and operational features of plant, equipment and hand and power tools
- workplace safety requirements:
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - electrical hazards
 - exposure to silica
 - exposure to loud noise
- current and relevant Australian standards and building codes
- features of working drawings and specification
- environmental requirements for workplace processes and waste disposal
- manufacturer's specifications relating to paving products.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPA3003 Cut segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3003A Cut segmental pavers. Minor title change. Updated to meet the Standards for Training Packages.

Application

This unit specifies the skills and knowledge required to measure, mark and cut segmental paving. It includes the use of paver cutting tools.

This unit applies to those who cut segmental pavers as part of the completion of paving work on external areas of new and existing sites. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying and Blocklaying

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- | | | |
|-------------------------------|-----|---|
| | 1.2 | Follow requirements in workplace safety and environmental documentation and workplace procedures. |
| | 1.3 | Determine job priorities and sequence job tasks in consultation with others on site. |
| 2 Prepare for and cut pavers. | 2.1 | Select and check condition of cutting equipment and tools and report any damage or faults to relevant person. |
| | 2.2 | Check conformity of pavers to be cut and place materials in preparation for cutting. |
| | 2.3 | Set up, stabilise and level cutting saw and appropriately discharge overflow water. |
| | 2.4 | Determine if saw blades are water cooled and examine for sharpness and damage. |
| | 2.5 | Measure, mark and accurately cut and trim pavers. |
| 3 Clean up. | 3.1 | Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements. |
| | 3.2 | Clean tools and equipment, check for serviceability and report damage or faults. |
| | 3.3 | Store and secure tools and equipment following workplace procedures. |

Foundation Skills

Candidates require:

- numeracy skills to:
 - read and accurately transfer measurements to materials for cutting
- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.
 -

Unit Mapping Information

Supersedes and is equivalent to CPCCPA3003A Cut segmental pavers

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPA3003 Cut segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3003A Cut segmental pavers. Minor title change. Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by measuring and cutting all required pavers for a paving project, minimum of 2.0 m x 3.0 m.

In doing this, the candidate must:

- use a wet cut brick saw to cut paver shapes
- use a bolster and other hand tools to trim cut pavers.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified paving products
- processes and techniques relating to paving:
 - laying of various paving patterns
 - cutting angles, concave, convex, straight and undercuts and insert cuts
- terminology relating to paving
- brick and paver expansion and, control and articulation joints
- functional and operational features of plant, equipment and hand and power tools
- workplace safety requirements:
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - electrical hazards
 - noise reduction
 - dust suppression
 - exposure to loud noise
 - exposure to silica
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPA3004 Finish segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3004A Finish segmental paving.
Minor title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to finish paving work by setting pavers using a variety of materials.

This unit applies to those who finish paving on external areas on new and existing sites. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying, Blocklaying and Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare the work.

1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.

- 1.2 Read, interpret and apply finish segmental paving requirements from current plans and specifications.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Use measurements and apply formulas to calculate material quantities.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.6 Select and check condition of equipment and tools and report any damage or faults to relevant person.
 - 1.7 Check conformity of materials against the specifications and place materials in in preparation for the work.
- 2 Set segmental pavers.
- 2.1 Secure paved area with an edging course as specified.
 - 2.2 Set segmental pavers with specified material and compact.
 - 2.3 Repeat setting process as required to ensure joints are full.
 - 2.4 Check paving for chipped, cracked or damaged pavers and replace.
- 3 Clean up.
- 3.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 3.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 3.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:

- use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCPA3004A Finish segmental paving

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPA3004 Finish segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3004A Finish segmental paving.
Minor title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by setting and finishing a paving project, minimum of 2.0 m x 3.0 m.

In doing this, the candidate must:

- secure the edging course in mortar
- set paving in sand, pebbles or mortar.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of approved paving materials:
 - types of segmental pavers
 - mortar ingredients and consistency
 - setting materials
 - sealing products
- processes and techniques relating to paving:
 - securing edging course using different methods
 - compacting and rolling during setting
- terminology relating to paving
- effect of salt and chlorine in pools on pavers, mortar and other bonding agents
- principles of vertical interlock, rotational interlock and horizontal interlock
- brick and paver expansion and, control and articulation joints
- functional and operational features of plant, equipment and hand and power tools:
 - plate compactors
 - rollers
- workplace safety requirements:
 - job safety and environmental analysis (JSEA)

- hazardous manual tasks
- exposure to silica
- exposure to loud noise
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPA3005 Maintain and repair segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3005A Maintain and repair segmental paving. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to undertake remedial action when maintaining and repairing segmental paving. It includes removing and replacing damaged or worn pavers and paving joints.

This unit applies to people who maintain and repair segmental pavers to external areas on new and existing sites. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Bricklaying, Blocklaying and Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Select, fit correctly and use personal protective

- equipment (PPE) appropriate for job.
- 1.2 Read, interpret and apply maintenance and repair of segmental paving requirements from specifications and work instructions.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Assess paved area for damage, wear or settlement.
 - 1.5 Identify factors relating to problems and develop remedial action.
 - 1.6 Use measurements and apply formulas to calculate material quantities.
- 2 Prepare for work.
- 2.1 Determine job priorities and sequence job tasks in consultation with others on site.
 - 2.2 Select and check condition of equipment and tools and report any damage or faults to relevant person.
 - 2.3 Check conformity of materials for size, dimension, colour and imperfections.
- 3 Carry out remedial action.
- 3.1 Remove required pavers without damage to surrounding pavers.
 - 3.2 Compact subgrade and reinstate pavers maintaining uniform joints.
 - 3.3 Set joints with matching material.
 - 3.4 Identify stains and undertake appropriate cleaning methods.
 - 3.5 Recognise causes of efflorescence and minimise condition.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle workplace and environmental requirements
 - 4.2 Clean tools and equipment, check for serviceability and

report damage or faults.

- 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCCPA3005A Maintain and repair segmental paving

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPA3005 Maintain and repair segmental paving

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPA3005A Maintain and repair segmental paving. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by removing and replacing a minimum of 12 damaged or worn pavers and repairing a minimum of 1.5 metres square sunken pavers.

In doing this, the candidate must:

- remove damaged, worn or sunken pavers without damage to surrounding pavers
- spread and compact bed to height of existing bed
- replace or return pavers with even and consistent joints
- set joints fully and clean area.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified paving materials:
 - sealing products
 - masonry cleaning chemicals
- processes and techniques relating to paving:
 - removing damaged pavers using various methods
 - laying of various paving designs and patterns
 - using various hand and pressure cleaning methods
- terminology relating to paving
- functional and operational features of plant, equipment and hand and power tools:
 - wet cut saw
 - plate compactors
 - rollers
- workplace safety requirements:
 - job safety and environmental analysis (JSEA)

- hazardous manual tasks
- electrical hazards
- exposure to silica
- exposure to loud noise
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3001 Fix standard plasterboard wall sheets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3001A Fix standard plasterboard wall sheets. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to fix standard plasterboard wall sheets to comply with manufacturers' and job specifications.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Licensing, legislative and/or certification requirements may apply to this unit in some states/territories.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions, determine sign-off requirements, plan sequence of work and complete notifications. |
|---------------------|--|

- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Collect evidence that the carpenter has completed the substrate to be plaster ready.
 - 1.6 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.7 Select materials required for task, including insulation, calculate quantities, handle safely and prepare and position ready for use.
- 2 Plan and cut wall sheets.
- 2.1 Determine work sequences, fixing processes and back blocking wall sheets from manufacturers' specifications and AS/NZS2589 Gypsum linings - application and finishing.
 - 2.2 Match sheet size to wall dimensions.
 - 2.3 Plan cuts to locate joints over windows and doors to minimise effects of movement.
 - 2.4 Plan cutting process to minimise dust exposure.
 - 2.5 Mark cables without brackets as directed.
 - 2.6 Follow manufacturers' specifications for cutting process and provision for penetrations.
 - 2.7 Cut sheets to minimise waste and number of joints, maximise board use, and leave openings for power points.

- | | | | |
|---|---------------------------|-----|--|
| 3 | Fix standard wall sheets. | 3.1 | Hang and fix sheets using manual handling techniques and following manufacturers' specifications, ensuring the sheets have appropriate gap from the floor. |
| | | 3.2 | Check work to ensure stop-up activities can be easily completed. |
| | | | |
| 4 | Clean up. | 4.1 | Clear work area and dispose of, reuse or recycle materials. |
| | | 4.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3001A Fix standard plasterboard wall sheets

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3001 Fix standard plasterboard wall sheets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3001A Fix standard plasterboard wall sheets. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by fixing a minimum 15 square metres of plasterboard wall sheets, including:

- butt joints between studs
- backblocking joints
- provisions for a door and a window opening
- joints positioned over windows and doors away from the corner of the opening
- a penetration for electrical and plumbing services.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, the National Construction Code, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for fixing plasterboard sheets, including AS/NZS2589 Gypsum linings - application and finishing
- levels of finish, including notifications required for application for level 5
- requirements for spacing of stud adhesive and temporary blocks
- quality policies and standards for fixing plasterboard sheets
- safety requirements, including personal protective equipment (PPE), job safety analyses and safety data sheets
- processes for safe handling and lifting of standard plasterboard sheets
- environmental requirements for fixing standard plasterboard sheets
- manufacturers' product specifications for fixing wall sheets
- types and uses of adhesives and fasteners for fixing standard plasterboard sheets

- materials storage and environmentally friendly waste management
- plans, drawings and specifications for fixing standard plasterboard sheets
- plasterboard fixing techniques for standard plasterboard sheets
- plasterboard materials
- processes for the calculation of material requirements for fixing standard plasterboard sheets
- types of tools and equipment for fixing standard plasterboard sheets.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3002 Fix standard plasterboard ceiling sheets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3002A Fix standard plasterboard ceiling sheets. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to hang and fix standard plasterboard ceiling sheets.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001* Prepare to work safely in the construction industry meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions, determine sign-off requirements for plaster-ready background, plan sequence of work and complete notifications. |
|---------------------|---|

- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Collect evidence that the carpenter has completed the substrate to be plaster ready.
 - 1.6 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.7 Select materials required for task, including insulation, calculate quantities, handle safely and prepare and position ready for use.
- 2 Plan and cut ceiling sheets.
- 2.1 Check framing is suitable for fixing the ceiling sheets.
 - 2.2 Match sheet size to ceiling dimensions and plan cuts to minimise waste and joints while maximising board use.
 - 2.3 Select screw types to suit metal or timber ceiling frame, or furring channel.
 - 2.4 Plan cuts to locate joints where the effect of glancing light highlighting jointing is minimised.
 - 2.5 Follow manufacturers' specifications for cutting process and provision for penetrations.
 - 2.6 Cut sheets, minimising dust exposure to others, and drilling or sawing openings as required.
- 3 Fix standard ceiling sheets to frames and furring channel.
- 3.1 Hang and fix sheets using manual handling techniques and following manufacturers' specifications.
 - 3.2 Check completed work to ensure stop-up activities can

be easily completed.

- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3002A Fix standard plasterboard ceiling sheets

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3002 Fix standard plasterboard ceiling sheets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3002A Fix standard plasterboard ceiling sheets. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by fixing two butted 15 square metres of plasterboard ceiling sheets to each of:

- a frame
- furring channels.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, the National Construction Code, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for fixing standard plasterboard ceiling sheets, including AS/NZS2589 Gypsum linings - application and finishing
- levels of finish, including notifications required for application for level 5
- requirements for spacing of stud adhesive and temporary blocks
- quality policies and standards for fixing standard plasterboard ceiling sheets
- safety requirements fixing standard plasterboard sheets, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- processes for safe handling and lifting of ceiling sheets
- environmental requirements for fixing standard plasterboard ceiling sheets
- manufacturers' product installation procedures and nominated specifications for fixing standard ceiling sheets
- types and uses of adhesives and fasteners for fixing standard plasterboard ceiling sheets
- techniques for fixing standard plasterboard ceiling sheets
- plasterboard materials

- materials storage and environmentally friendly waste management
- processes for fixing plasterboard ceiling sheets to furring channels and timber and metal frames
- plans, drawings and specifications fixing standard plasterboard ceiling sheets
- processes for the calculation of material requirements for fixing standard ceiling sheets
- types and uses of tools and equipment types for fixing standard plasterboard ceiling sheets.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3003 Fix battens

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3003A Fix battens. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to fix battens to ceiling joists or roof trusses when preparing to fix ceiling system sheets.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 1.7 Check joists and trusses are suitable for fixing battens and note any requirement to correct unevenness.
 - 1.8 Select fasteners to fix battens.
- 2 Cut and fix battens.
- 2.1 Use packing materials to correct uneven joists.
 - 2.2 Measure and cut battens.
 - 2.3 Fix battens using selected fasteners at specified centres following manufacturers' specifications and allowing for control joints.
 - 2.4 Check completed work for alignment and fixing.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials.
 - 3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3003A Fix battens

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3003 Fix battens

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3003A Fix battens. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by fixing battens for a 9 square metre ceiling, including at least one control joint.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for fixing battens
- quality policies and standards for fixing battens
- safety requirements for fixing battens, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for fixing battens
- plans, drawings and specifications for fixing battens
- batten fixing techniques
- control joints
- types of tools and equipment for fixing battens.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures

- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3004 Fix wet area sheets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3004A Fix wet area sheets. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to fix wet area sheets to comply with manufacturer and job specifications.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Plan and cut wet area sheets.
- 2.1 Determine work sequences, fixing processes from manufacturers' specifications and AS/NZS2589 Gypsum linings - application and finishing.
 - 2.2 Match sheet size to wall dimensions.
 - 2.3 Plan cutting process to minimise dust exposure for others.
 - 2.4 Follow manufacturers' specifications for cutting process and provision for penetrations.
 - 2.5 Cut sheets to minimise waste and number of joints and maximise board use.
- 3 Fix wet area sheets.
- 3.1 Hang and fix sheets using manual handling techniques and following manufacturer's specifications, ensuring the sheets have appropriate gap from the floor and flashing are installed to specification.
 - 3.2 Check completed work to ensure stop-up activities can be easily completed.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in

accordance with manufacturers' specifications

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3004A Fix wet area sheets

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3004 Fix wet area sheets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3004A Fix wet area sheets. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by hanging and fixing 15 square metres of wet area sheets.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, the National Construction Code, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for fixing wet area sheets, including AS/NZS2589 Gypsum linings - application and finishing
- quality policies and standards for fixing wet area sheets
- requirements for wet areas that will be tiled, and for wet areas that will be non-tiled
- safety requirements for fixing wet area sheets, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- processes for safe handling and lifting of wet area sheets
- environmental requirements for fixing wet area sheets
- manufacturers' specifications for fixing wet area sheets
- types and uses of adhesives and fasteners for fixing wet area plasterboard sheets
- wet area plasterboard materials
- installing flashings to specification
- materials storage and environmentally friendly waste management
- plans, drawings and specifications for fixing wet area plasterboard sheets
- plasterboard fixing techniques for wet area plasterboard sheets
- processes for the calculation of material requirements for fixing wet area plasterboard sheets
- types of tools and equipment for fixing wet area plasterboard sheets.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3005 Fix ceiling sheets to external protected areas

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3005A Fix ceiling sheets to external protected areas. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to hang and fix ceiling sheets to external protected areas.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Plan and cut ceiling sheets.
- 2.1 Check battens is suitable for fixing the ceiling sheets.
 - 2.2 Match sheet size to ceiling dimensions and plan cuts to minimise waste and joints while maximising board use.
 - 2.3 Plan location of joints to minimise effect on function and visual appearance.
 - 2.4 Follow manufacturers' specifications for cutting process and provision for penetrations.
 - 2.5 Cut sheets, minimising dust exposure to others, and drilling or sawing openings as specified.
- 3 Fix ceiling sheets.
- 3.1 Hang and fix sheets using manual handling techniques and following manufacturers' specifications.
 - 3.2 Check completed work to ensure stop-up activities can be easily completed.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3005A Fix ceiling sheets to external protected areas

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3005 Fix ceiling sheets to external protected areas

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3005A Fix ceiling sheets to external protected areas. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by fixing a minimum 15 square metres of ceiling sheets to an external protected area.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, the National Construction Code, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for fixing ceiling sheets to external protected areas, including AS/NZS2589 Gypsum linings - application and finishing
- quality policies and standards for fixing ceiling sheets to external protected areas
- safety requirements for fixing ceiling sheets to external protected areas, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- processes for safe handling and lifting of ceiling sheets
- environmental requirements for fixing ceiling sheets to external protected areas
- manufacturers' product installation procedures and nominated specifications for fixing ceiling sheets to external protected areas
- types and uses of fasteners for fixing ceiling sheets to external protected areas
- plasterboard materials
- materials storage and environmentally friendly waste management
- plans, drawings and specifications for fixing ceiling sheets to external protected areas
- plasterboard fixing techniques for fixing ceiling sheets to external protected areas

- processes for the calculation of material requirements for fixing ceiling sheets to external protected areas
- types of tools and equipment for ceiling sheets to external protected areas.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3006 Fix fibre cement board

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3006A Fix fibre cement board. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to fix fibre cement board.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Plan and cut fibre cement board.
- 2.1 Check framing is suitable for the fibre cement board and determine fixing processes from manufacturers' specifications.
 - 2.2 Match sheet size to wall and ceiling dimensions and plan cuts to minimise waste and joints while maximising board use.
 - 2.3 Plan location of joints to minimise effect on function and visual appearance.
 - 2.4 Follow manufacturers' specifications for cutting process and provision for penetrations.
 - 2.5 Cut sheets, minimising dust exposure to others, and drilling or sawing openings as specified.
- 3 Fix fibre cement board.
- 3.1 Hang and fix sheets using manual handling techniques and following manufacturers' specifications.
 - 3.2 Check completed work to ensure stop-up activities can be easily completed.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3006A Fix fibre cement board

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3006 Fix fibre cement board

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3006A Fix fibre cement board. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by fixing a minimum 15 square metres of fibre cement board.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, the National Construction Code, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for fixing fibre cement boards
- quality policies and standards for fixing fibre cement boards
- requirements for wet areas that will be tiled, and for wet areas that will be non-tiled
- safety requirements for fixing fibre cement boards, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- processes for safe handling and lifting of fibre cement boards
- environmental requirements for fixing fibre cement boards
- manufacturers' product installation procedures and nominated specifications for fixing fibre cement boards
- types and uses of adhesives and fasteners for fibre cement boards
- fibre cement board materials
- materials storage and environmentally friendly waste management
- plans, drawings and specifications for fixing fibre cement boards
- fixing techniques for fibre cement boards
- processes for the calculation of material requirements for fixing fibre cement boards
- types of tools and equipment for fixing fibre cement boards.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3007 Apply levels of finish standards to planning and inspection of own work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3007A Apply levels of finish standards to planning and inspection of own work. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to identify the level of finish standards and their application to the planning and inspection of own work.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for task.

1.1 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.2 Select and use personal protective equipment (PPE) for each stage of the task.
- 2 Plan to achieve required levels of finish.
- 2.1 Assess workplace documents and specifications to establish and describe required levels of finish and related process requirements.
- 2.2 Plan use of materials and work processes to meet required level of finish.
- 3 Inspect completed work for level of finish.
- 3.1 Assess distinguishing features of levels of finish in the completed work against finish requirements.
- 3.2 Describe effects of framing tolerances, windows, light fittings and location of joints on finish of plasterboard.
- 3.3 Inspect build-up on joints for effect on level of finish.
- 3.4 Describe and assess classification level of finish of inspected work, identify problems to level of finish and select method of rectification.
- 3.5 Determine and describe requirements for painting of finished surface

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3007A Apply levels of finish standards to planning and inspection of own work

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3007 Apply levels of finish standards to planning and inspection of own work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3007A Apply levels of finish standards to planning and inspection of own work. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by planning, inspecting and reporting on application of level 3, 4 and 5 finishes to a minimum of 15 square metres of own work.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, the National Construction Code, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for applying levels of finish standards to planning and inspection of work
- quality policies and standards for applying levels of finish standards to planning and inspection of work
- safety requirements for applying levels of finish standards to planning and inspection of work
- features and applications of each level of finish
- manufacturers' product installation procedures and nominated specifications for the work process to produce level 3, 4 and 5 finishes
- effect of quality of work of other trades on plastering finishes
- methods of rectification of problems finishes
- faults in building structure, materials quality and finished joints and edges that will influence finish
- documentation of finishes and their application.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3008 Mix plastering compounds

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3008A Mix plastering compounds.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to mix plastering compounds using hand and mechanical mixing techniques.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, work health and safety (WHS) and environmental |

- requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Select materials, equipment and work area.
- 2.1 Select plastering compounds compatible with task requirements.
 - 2.2 Select processes and equipment for mixing compounds.
 - 2.3 Select suitable work area to minimise dust exposure to self and others, and to minimise manual handling risks when shifting, mixing and blending.
- 3 Mix compound.
- 3.1 Mix compound using hand and mechanical mixing techniques, tools and equipment.
 - 3.2 Adjust mixture consistency to suit intended use.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3008A Mix plastering compounds

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3008 Mix plastering compounds

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3008A Mix plastering compounds.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by mixing a minimum three different plaster compounds to specification. Both hand and mechanical techniques must be used.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- quality policies and standards for mixing plaster compounds
- safety requirements for mixing plaster compounds, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for mixing plaster compounds
- manufacturers' specifications for mixing plaster compounds
- hand and mechanical mixing techniques, tools and equipment
- processes for adjusting mixture consistency to suit intended use.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3009 Finish plasterboard joints manually

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3009A Finish plasterboard joints manually. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to manually finish plasterboard joints.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
- 2 Finish joints.
- 2.1 Select base coat, cement and tape.
 - 2.2 Mix plaster coats to manufacturers' specifications.
 - 2.3 Apply tape to plasterboard joints and smooth the tape, avoiding wrinkles.
 - 2.4 Apply plaster base coat over tape, overlapping to specifications, and allow to dry.
 - 2.5 Check for plaster build up, and sand to create a smooth finish.
 - 2.6 Apply plaster finish, overlapping the joint to specifications.
 - 2.7 Sand to specified finish.
 - 2.8 Check completed work and rectify any nonconformances to specifications.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials.
 - 3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3009A Finish plasterboard joints manually

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3009 Finish plasterboard joints manually

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3009A Finish plasterboard joints manually. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by manually finishing plasterboard joints, including a minimum:

- two vertical joints between standard-size plasterboard sheets
- two horizontal joints between standard-size plasterboard sheets
- two vertical corner joints between standard-size plasterboard sheets
- two internal corner joints between standard-size plasterboard wall sheets and ceiling sheets
- two external corner joints between standard-size plasterboard wall sheets and ceiling sheets
- a minimum 300mm x 300mm niche.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for finishing plasterboard joints manually
- quality policies and standards for finishing plasterboard joints manually
- safety requirements for finishing plasterboard joints manually, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for finishing plasterboard joints manually
- types and uses of materials for finishing plasterboard joints manually
- finishing techniques, including:

- processes for finishing system joints
- quality checks for joint finishing
- work sequence
- manufacturers' product specifications for finishing plasterboard joints manually
- processes for the calculation of material requirements for finishing plasterboard joints manually
- types of tools and equipment for finishing plasterboard joints manually.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3010 Manually sand plaster work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3010A Manually sand plaster work.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to hand sand joints in plaster walls, ceilings and cornices.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions, determine required level of finish, and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
- 2 Sand joints.
- 2.1 Check that joints are dry and fully cured.
 - 2.2 Set up sanding floats, dust suppression/protection, and warning signs and barricades.
 - 2.3 Sand plaster work to required standard of finish, including taking care not to over-sand.
- 3 Inspect and complete work.
- 3.1 Inspect completed sanding work for specified level of finish.
 - 3.2 Carefully brush down sanded area with soft bristle brush.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3010A Manually sand plaster work

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3010 Manually sand plaster work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3010A Manually sand plaster work.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by manually sanding plaster work, including a minimum:

- two vertical joints between standard-size plasterboard sheets
- two horizontal joints between standard-size plasterboard sheets
- two vertical corner joints between standard-size plasterboard sheets
- two internal corner joints between standard-size plasterboard wall sheets and ceiling sheets
- two external corner joints between standard-size plasterboard wall sheets and ceiling sheets
- a 300 mm x 300 mm niche.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for manually sanding plaster work
- workplace quality policies and standards for manually sanding plaster work
- safety requirements for manually sanding plaster work, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- reasons for use of P1 rating (protection against mechanically generated particles) or P2 rating (protection against mechanically and thermally generated particles) mask and protective clothing when sanding topcoats
- environmental requirements for manually sanding plaster work
- processes for checking that joints are dry and fully cured
- manufacturers' components and materials

- effects of glancing light on plasterboard joints when paint is applied
- types of tools and equipment for manually sanding plaster work.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3012 Cut and fix paper-faced cornices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3012A Cut and fix paper-faced cornices. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to measure, cut and fix paper-faced cornices.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit CPCCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
- 2 Plan, measure and cut cornices.
- 2.1 Select specified style of paper-faced cornice.
 - 2.2 Plan requirements to enable safe work at heights.
 - 2.3 Measure and record cornice lengths for each wall/ceiling.
 - 2.4 Handle cornice following safe manual handling procedures.
 - 2.5 Use recorded measurements to select cornice materials, allowing for mitre requirements.
 - 2.6 Cut cornice using safe manual handling procedures.
- 3 Fix cornice.
- 3.1 Prepare cornice adhesive to manufacturers' specifications, adjusting consistency of mix to suit selected hand or mechanical application method.
 - 3.2 Apply minimum 10mm bead of adhesive to cornice.
 - 3.3 Fit cornice using methods of temporary or permanent fixing to hold the cornice in place at the wall and ceiling junction.
 - 3.4 Apply adhesive to mitres.
- 4 Finish work.
- 4.1 Remove adhesive from cornice faces.
 - 4.2 Fill and sand/polish mitres and joints.
 - 4.3 Remove temporary fixings and fill holes.

- 5
 - 5.1 Clear work area and dispose of, reuse or recycle materials.
 - 5.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3012A Cut and fix paper-faced cornices.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3012 Cut and fix paper-faced cornices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3012A Cut and fix paper-faced cornices.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by installing a minimum of 5 linear metres of each of 55 mm, 90 mm and profile paper-faced cornice. Each installation must include at least one internal mitre, one external mitre, one splayed mitre and one butt joint mitre.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the and Australian Standards for cutting and fixing paper-faced cornices
- quality policies and standards for cutting and fixing paper-faced cornices
- safety requirements for cutting and fixing paper-faced cornices, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets, and working safely at heights
- techniques for cutting, safe lifting, temporary and permanent fixing of cornice
- requirements for working safely at heights when cutting and fixing paper-faced cornices
- manufacturers' specifications for preparing adhesives and fixing cornices
- methods of using levels to align paper-faced cornice
- plans, drawings and specifications for cutting and fixing paper-faced cornices
- processes for measuring, calculating and recording cornice requirements
- types of tools and equipment for cutting and fixing paper-faced cornices.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3015 Install acoustic and thermal environmental protection systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and equivalent to CPCCPB3015A Install acoustic and thermal environmental protection systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install wall and ceiling systems that satisfy environmental requirements in terms of acoustic ratings and energy efficiency ratings in accordance with sustainable building practices.

It includes planning and preparation for work, installation of insulation to wall cavities and plenum, installation of acoustic systems and completion of post work clean-up activities.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 2 Install blanket insulation to walls.
 - 2.1 Determine stud configuration for installation processes.
 - 2.2 Install safety wire mesh.
 - 2.3 Install insulating blanket in full length runs where practicable or, if joined, make joints at centre of frame member.
 - 2.4 Abut adjacent runs of blanket insulation with closed joints.
 - 3 Install acoustic systems.
 - 3.1 Select specified acoustic materials in accordance with manufacturers' specifications for walls and ceiling.
 - 3.2 Select specified acoustic plaster sheeting and acoustic ceiling tiles in accordance with manufacturers' weighted sound reduction index (RW rating).
 - 3.3 Fix and seal acoustic plaster sheeting and acoustic tiles to walls and ceiling.

- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3015A Install acoustic and thermal environmental protection systems

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3015 Install acoustic and thermal environmental protection systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and equivalent to CPCCPB3015A Install acoustic and thermal environmental protection systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by installing a minimum:

- 9 square metres of blanket insulation to a stud wall/ceiling
- 9 square metres of acoustic plaster sheeting to walls and ceiling
- 9 square metres of acoustic tiles to ceiling.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, the National Construction Code, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for installing acoustic and thermal environmental protection systems
- regulation and building codes related to acoustic and thermal protection requirements and systems
- sustainable building practices related to acoustic and thermal protection requirements and systems
- quality policies and standards for installing acoustic and thermal environmental protection systems
- safety requirements for installing acoustic and thermal environmental protection systems, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- acoustic and thermal protection systems materials
- acoustic protection systems installation techniques
- basic acoustic theory

- thermal system installation techniques
- basic thermal theory related to heat loss
- materials storage and environmentally friendly waste management
- plans, drawings and specifications for installing acoustic and thermal environmental protection systems
- processes for the calculation of material requirements for installing acoustic and thermal environmental protection systems
- types of acoustic protection systems available for wall and ceiling application and their characteristics, strengths and limitations
- types of thermal protection systems available for wall and ceiling application and their characteristics, strengths and limitations
- types and uses of tools and equipment installing acoustic and thermal environmental protection systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3016 Install and finish columns

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Removed duplicated comma in Knowledge Evidence.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3016A Install and finish columns.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install and finish columns.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
- 2 Select materials and processes.
 - 2.1 Identify manual handling risks associated with shifting and lifting columns.
 - 2.2 Select processes for installing columns.
 - 2.3 Select specified columns, fasteners and compounds compatible with column materials.
- 3 Install columns
 - 3.1 Prepare to install columns.
 - 3.2 Fit collars and finials.
 - 3.3 Use matching stopping material to stop and finish column joints and edges.
 - 3.4 Finish ends of columns and collars.
- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3016A Install and finish columns

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3016 Install and finish columns

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Removed duplicated comma in Knowledge Evidence.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3016A Install and finish columns.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by installing a minimum of two floor-to-ceiling columns.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for installing and finishing columns
- policies and standards for installing and finishing columns
- safety requirements for installing and finishing columns, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- manufacturers' specifications for installing and finishing columns
- names and architectural styles for different types of columns
- types and uses of columns
- materials storage and environmentally friendly waste management
- plans, drawings and specifications for installing and finishing columns
- techniques and processes for installing and finishing columns
- processes for the calculation of material requirements for installing and finishing columns
- types of tools and equipment for installing and finishing columns.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3017 Rectify faults in drywall applications

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPB3017A Rectify faults in plaster applications. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to identify and rectify faults in drywall applications. It includes determining the causes of faults.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Identify faults, determine causes and recommend rectification.
 - 2.1 Identify, measure and describe faults in drywall applications using accurate construction industry terminology.
 - 2.2 Conduct investigation to establish cause of faults, in drywall applications.
 - 2.3 Plan processes to rectify faults achieve specified levels of finish.
 - 3 Rectify faults.
 - 3.1 Follow planned rectification processes.
 - 3.2 Check that faults have been rectified to specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCPB3017A Rectify faults in plaster applications.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3017 Rectify faults in drywall applications

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPB3017A Rectify faults in plaster applications. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by determining the causes and rectifying a minimum of two examples of each the following faults in drywall applications:

- faults in installation of drywall
- product faults
- faults in sanding and setting.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the Australian Standards relevant to rectifying faults in drywall applications
- quality policies and standards for rectifying faults in drywall applications
- safety requirements for rectifying faults in drywall applications, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- identification of faults in materials, installation and finish quality
- manufacturers' product installation procedures and specifications for rectifying faults in plaster applications
- fault types, causes and rectification methods, including:
 - fault types
 - board fracture
 - bullnose
 - positive and negative edge angle (chisel edge)

- damaged edges
- end peel
- hinge drywall
- hollow joints
- over-built joints
- ink bleed through
- joint tape bubbles
- parrot beak
- pinholes
- scuffing
- shoulders
- wavy drywall.
- fault causes
 - external causes
 - inappropriate selection of work methods or level of finish
 - materials or material selection faults
 - poor workmanship
- types and uses of rectification materials
- materials storage and environmentally friendly waste management
- plans, drawings and specifications for rectifying faults in drywall applications
- techniques and processes for rectifying faults in drywall applications
- processes for the calculation of material requirements for rectifying faults in drywall applications
- types of tools and equipment for rectifying faults in drywall applications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3018 Use vacuum and electric sanding equipment to finish plaster work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3018A Use vacuum and electric sanding equipment to finish plaster work. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to machine sand plaster joints in walls and ceilings.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Read and interpret work instructions, determine required standard of finish, and plan sequence of work.

- 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use related personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
- 2 Mechanically sand joints and screw heads.
 - 2.1 Select sanding grit to minimise liner paper damage, set up sanding equipment, leads and dust protection.
 - 2.2 Use stance and posture to hold and manipulate sanding equipment to minimise manual handling risks.
 - 2.3 Complete sanding joints and screw heads to required standard of finish, taking care to not over-sand.
 - 2.4 Inspect completed sanding work for quality.
 - 2.5 Report any sand-through areas.
 - 2.6 Brush down sanded area.
- 3 Clean up.
 - 3.1 Clear work area and dispose of, reuse or recycle materials.
 - 3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3018A Use vacuum and electric sanding equipment to finish plaster work

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3018 Use vacuum and electric sanding equipment to finish plaster work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3018A Use vacuum and electric sanding equipment to finish plaster work. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by using vacuum and electric sanding equipment to finish plaster work in a minimum 12 square metre room with plastering to all four walls and the ceiling, with at least one door and one window, and plaster to internal and external corner joints.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for using vacuum and electric sanding equipment to finish plaster work
- quality policies and standards for using vacuum and electric sanding equipment to finish plaster work
- safety requirements for using vacuum and electric sanding equipment to finish plaster work, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for using vacuum and electric sanding equipment to finish plaster work
- reasons for use of P1 rating (protection against mechanically generated particles) or P2 rating (protection against mechanically and thermally generated particles) mask and protective clothing when emptying and cleaning equipment and disposing of dust
- effects of glancing light on plasterboard joints when paint is applied
- factors that influence level of finish

- manufacturers' specifications for using vacuum and electric sanding equipment to finish plaster work.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3019 Inspect equipment for serviceability

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3019A Inspect equipment for serviceability. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required for equipment users to inspect and report on the safety and operational effectiveness of equipment, meeting all relevant requirements of the National Construction Code (NCC), Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Read and interpret work instructions and plan work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use related personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 2 Inspect equipment.
 - 2.1 Select tools and equipment, check for serviceability and rectify or report any faults.
 - 2.2 Inspect equipment prior to transport and set up.
 - 2.3 Read and comply with manufacturer's instructions for equipment.
 - 2.4 Check warning systems for operational effectiveness.
 - 3 Identify and assess impact of faults on work requirements.
 - 3.1 Identify faults and assess potential effect of the fault on operation of equipment for the required work.
 - 3.2 Assess equipment wear, identifying likely requirements for future repair.
 - 3.3 Report faults that may affect the safe operation of the equipment to appropriate personnel for rectification, and tag and set aside equipment for repair.
 - 3.4 Make accurate reports of the results of the inspection and testing.
 - 3.5 Ensure records are clear, unambiguous and concise with clear reference made to items that may require replacement or repair in the future.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3019A Inspect equipment for serviceability

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3019 Inspect equipment for serviceability

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3019A Inspect equipment for serviceability. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by demonstrating the ability to:

- select and use appropriate equipment and work methods
- identify faults in equipment
- apply knowledge of industry products to identify:
 - manufacturers' instructions for equipment
 - wear that may require maintenance in the future
 - compatible components for running repairs
- follow work instructions, operating procedures and inspection practices to:
 - identify damage to goods, equipment or products
- maintain workplace records in relation to materials, plant and equipment use.

All work must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for inspecting equipment for serviceability
- workplace quality policies and standards for inspecting equipment for serviceability
- safety requirements for inspecting equipment for serviceability
- environmental requirements for inspecting equipment for serviceability

- application of product and process knowledge to identify problems and predict consequences
- identifying potential for health and safety risks from workplace information and labels
- identifying the purpose of tags and logs of use for equipment
- implications for work output, safe operations and quality for instructions to be followed
- job safety analysis (JSA) and safe work method statements
- manufacturers' inspection procedures and specifications for the equipment:
 - pre-operational functional safety check procedures and manufacturer specifications for:
 - damage
 - leaks
 - obstructions that may limit operational capability
 - worn requirements
- names and functions of equipment, components and materials:
 - materials:
 - beads
 - cement render
 - fibre cement sheets
 - finishing materials
 - plaster compounds
 - plasterboard
 - platerglass sheets
 - water resistant plasterboard
 - tools and equipment:
 - broad knives
 - brooms
 - drills
 - drop saws
 - hand and power drills
 - hand saws
 - keyhole saws
 - ladders
 - measuring tapes and rules
 - paintbrushes
 - plasterboard hammers
 - plasterer's trowels
 - scaffold
 - screw guns
 - sheet lifters
 - T squares

- taping knives
- trestles and planks
- operating principles and working components of equipment used
- quality requirements:
 - Australian standards
 - internal company quality policy and standards
 - manufacturer specifications
 - workplace operations and procedures
- requirements to plan own work:
 - assessment of conditions and hazards
 - determination of work requirements and safety plans and policies
 - equipment defect identification
 - information:
 - diagrams or sketches
 - instructions issued by authorised organisational or external personnel
 - manufacturer specifications and instructions, where specified
 - material safety data sheets (MSDS)
 - memos
 - regulatory and legislative requirements pertaining to equipment for serviceability
 - relevant Australian standards
 - safe work procedures relating to equipment for serviceability
 - signage
 - verbal, written and graphical instructions
 - work bulletins
 - work schedules, plans and specifications:
 - work site inspection
- safely use equipment, shift and handle products and materials:
 - emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation
 - hazard control
 - hazardous materials and substances
 - organisational first aid
 - PPE prescribed under legislation, regulations and workplace policies and practices
 - safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - concealed services (water, power and gas)
 - lighting
 - traffic control
 - restricted access barriers
 - trip hazards

- work site visitors and the public
- working at heights
- working in confined spaces
- working in proximity to others
- use of firefighting equipment
- use of tools and equipment
- workplace environmental requirements and safety:
 - clean-up management
 - dust and noise
 - vibration
 - waste management.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3020 Match, mitre and install cast ornamental cornices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3020A Match, mitre and install cast ornamental cornices. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to measure, match, cut and fix cast ornamental cornices.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
|---------------------|---|

- 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Plan and measure for cornice work.
- 2.1 Select specified style of cornice.
 - 2.2 Plan requirements to enable safe work at heights.
 - 2.3 Measure and record cornice lengths for each wall/ceiling.
 - 2.4 Handle cornice following safe manual handling procedures.
 - 2.5 Use recorded measurements to select cornice materials, allowing for mitre requirements.
- 3 Cut cornice lengths.
- 3.1 Determine and mark matching points for ornamental cornice.
 - 3.2 Cut cornice using safe manual handling procedures.
 - 3.3 Check pattern match.
- 4 Fix cornice.
- 4.1 Prepare cornice adhesive to manufacturers' specifications, adjusting consistency of mix to suit selected hand or mechanical application method.
 - 4.2 Apply minimum 10mm bead of adhesive to cornice.
 - 4.3 Fit cornice using methods of temporary or permanent

- fixing to hold the cornice in place at the wall and ceiling junction.
- 4.4 Apply adhesive to mitres.
- 5 Finish work.
- 5.1 Remove excess cornice adhesive.
- 5.2 Fill and smooth joins, pattern matches and junctions.
- 5.3 Remove temporary fixings and supports and fill holes.
- 6 Clean up.
- 6.1 Clear work area and dispose of, reuse or recycle materials.
- 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3020A Match, mitre and install cast ornamental cornices

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3020 Match, mitre and install cast ornamental cornices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3020A Match, mitre and install cast ornamental cornices. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by matching, cutting mitres and installing a minimum of 12 metres of ornamental cornice.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for matching mitre and installing cast ornamental cornices
- workplace quality policies and standards for matching mitre and installing cast ornamental cornices
- safety requirements for matching mitres and installing cast ornamental cornices, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets, working safely at heights
- techniques for cutting, safe lifting, temporary and permanent fixing of cornice
- methods of using levels to align ornamental cornice
- manufacturers' specifications for preparing adhesives
- identifying faults in materials and construction that may influence the matching mitres process
- types and uses of ornamental cornice profiles and sizes
- plans, drawings and specifications for cutting and fixing ornamental cornices
- processes for measuring, calculating and recording cornice requirements
- types of tools and equipment for cutting and fixing ornamental cornices.

Assessment Conditions

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3021 Install and fix residential acoustic plaster products

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3021A Install and fix residential acoustic plaster products. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install residential acoustic plaster systems.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001* Prepare to work safely in the construction industry meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|---|
| 1 Plan and prepare. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | 1.2 | Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select materials required for task, including fasteners, sealers and penetration seals compatible with system performance requirements, calculate quantities, handle safely and prepare and position ready for use.
 - 1.6 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
- 2 Fix acoustic system.
- 2.1 Install acoustic systems to manufacturers' specifications.
 - 2.2 Caulk edges of board.
 - 2.3 Check completed work to confirm that it meets installation specifications and requirements.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials.
 - 3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3021A Install and fix residential acoustic plaster products

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3021 Install and fix residential acoustic plaster products

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3021A Install and fix residential acoustic plaster products. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by installing a minimum 15 square metres of an acoustic plaster system to walls and ceiling.

All work must be performed to the standard required in the workplace and must comply with the National Construction Code, Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for installing and fixing residential acoustic plaster products
- quality policies and standards for installing and fixing residential acoustic plaster products
- safety requirements for installing and fixing residential acoustic plaster products, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for installing and fixing residential acoustic plaster products
- techniques for selecting materials required for task, including fasteners, sealers and penetration seals compatible with system performance requirements
- manufacturers' specifications for installing and fixing residential acoustic plaster products
- types and uses of tools and equipment for installing and fixing residential acoustic plaster products.

Assessment Conditions

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3022 Use mechanical jointing equipment to finish joints

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3022A Use mechanical jointing equipment to finish joints. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to use mechanical taping and filling tools to finish joints.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
|---------------------|---|

- 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls.
 - 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
 - 1.6 Select materials required for task, including compound, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare for work.
- 2.1 Locate penetrations and openings and erect barriers at identified points.
 - 2.2 Clear and clean floor.
 - 2.3 Mix compound to required consistency using safe work methods when mechanically mixing compound.
 - 2.4 Adjust tool handle to required length.
 - 2.5 Maintain correct posture during operations and rotate tasks in accordance with work site risk assessment.
- 3 Reinforce and fill joints using mechanical filling and taping equipment.
- 3.1 Tape and fill joints with minimum compound loaded for immediate use, so that they are smooth, even and reinforced to form a seamless appearance.
 - 3.2 Tape and fill internal angles to achieve a perceived smooth and even appearance, ensuring there is sufficient compound under the tape.
 - 3.3 Complete flat joints.
- 4 Finish joints mechanically.
- 4.1 Complete finishing joints with minimum compound loaded for immediate use.

- 4.2 Finish joints to produce a smooth and even seamless appearance, ensuring that the box crown is set correctly.
 - 4.3 Maintain correct posture during operations and rotate tasks in accordance with work site risk assessment.
- 5 Clean up.
- 5.1 Clear work area and dispose of, reuse or recycle materials.
 - 5.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3022A Use mechanical jointing equipment to finish joints

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3022 Use mechanical jointing equipment to finish joints

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3022A Use mechanical jointing equipment to finish joints. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by using mechanical filling and taping equipment to finish a minimum of 3 metres of each of the following:

- smooth and even crowned joints
- internal angles
- external angles
- ceiling joints
- square set joints.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for using mechanical equipment to finish joints
- quality policies and standards for using mechanical equipment to finish joints
- safety requirements for using mechanical equipment to finish joints, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for using mechanical equipment to finish joints
- processes and techniques for using mechanical equipment to finish joints
- manufacturers' specifications for equipment and materials
- types of mechanical tools and equipment for finishing joints.

Assessment Conditions

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3026 Erect and maintain trestle and plank systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3026B Erect and maintain trestle and plank systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to erect and monitor trestle and plank work platforms.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plasterboard

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside.
- 2 Prepare work site.
- 2.1 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 2.2 Clean work area of unnecessary materials.
 - 2.3 Assess risks to other workers, power supply and other services.
 - 2.4 Plan access to erected trestle and plank platform.
 - 2.5 Plan access of plaster products and tools from the plank.
- 3 Erect trestle and plank system.
- 3.1 Identify whether situation is appropriate for the use of trestle and plank system.
 - 3.2 Select type of trestle and plank system and work method to meet Australian Standard AS6001-1999.
 - 3.3 Compare benefits of different trestle and plank systems.
 - 3.4 Inspect trestles and planks for serviceability as required by the Australian standards and report faults.
 - 3.5 Position trestles for the work and the planks to be used.
 - 3.6 Fit planks to the trestles at the required height using authorised procedures and within regulatory restrictions.
- 4 Inspect system.
- 4.1 Inspect trestle and plank work platform before and during use.
 - 4.2 Report faults and rectify or label system to prevent use pending repair.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPB3026B Erect and maintain trestle and plank systems

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3026 Erect and maintain trestle and plank systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPB3026B Erect and maintain trestle and plank systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by erecting the following for a ceiling lining construction job:

- A A-frame trestle scaffold of a minimum 500mm width and 3m length
- A H-frame trestle scaffold of a minimum 500mm width and 3m length.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, national construction codes, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for erecting and maintaining trestle and plank systems, including Australian standards, AS/NZS4576 Guidelines for Scaffolding
- quality policies and standards for erecting and maintaining trestle and plank systems
- safety requirements for erecting and maintaining trestle and plank systems, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for erecting and maintaining trestle and plank systems
- faults in operation of equipment, including:
 - loose components
 - damage to trestles or planks
 - displacement of components
- identifying potential for health and safety risks from workplace information and labels
- identifying the purpose of tags and logs of use for equipment
- job safety analysis (JSA) and safe work method statements

- manufacturers' specifications for tools and equipment
- types of tools and equipment for erecting and maintaining trestle and plank systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD2011 Handle and store painting and decorating materials

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD2011A Handle painting and decorating materials. Minor title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to handle, sort and store painting and decorating materials.

The unit includes handling, sorting, storing, protecting and distributing materials and cleaning-up.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction industry training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of CPCCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Review work instructions to handle painting and decorating materials.
 - 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and rectify/report any faults.
 - 2 Identify, handle and store painting and decorating materials and components.
 - 2.1 Check materials and components for conformity to material schedule, plans, specifications and environmental characteristics.
 - 2.2 Identify handling characteristics of materials and components from safety data sheets (SDS) and regulatory requirements and use safe and effective handling techniques.
 - 2.3 Check that storage locations meet fire safety, ventilation and product-dispersal requirements.
 - 2.4 Sort materials by type and size and stack for ease of identification and retrieval.
 - 2.5 Protect material and components against physical and water damage and store clear of traffic ways.
 - 3 Select and distribute materials and components for use.
 - 3.1 Select, safely handle and distribute materials from stack to required job location.
 - 3.2 Store materials to best serve their subsequent use.
 - 3.3 Prepare work areas, including removing objects and using drop sheets to protect surrounding surfaces.

- 4 Clean up.
 - 4.1 Clean up in accordance with all legislative and workplace requirements for safety, waste disposal, safe handling and protection of the environment.
 - 4.2 Identify hazardous material for separate handling by authorised personnel.
 - 4.3 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 4.4 Check and maintain tools and equipment and clean with appropriate solvents.
 - 4.5 Dispose of paint waste and of water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
 - 4.6 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD2011A Handle painting and decorating materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD2011 Handle and store painting and decorating materials

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD2011A Handle painting and decorating materials. Minor title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by safely handling and storing painting and decorating materials for two painting and decorating activities, including, on each occasion:

- a range of coatings
- two each of:
 - cleaning solvents
 - fillers
 - adhesives
- wall and decorative covering materials.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety data sheets (SDS)
- safety requirements relevant to handling and storing painting and decorating materials
- environmental requirements relevant to handling and storing painting and decorating materials
- waste management, including:
 - solid waste and paint sludge disposal techniques relating to relevant legislation, local council regulations and Environmental Protection Authority (EPA)
 - alternative and natural paint and paint materials
- basic spontaneous combustion theory, causes and controls of spontaneous ignition

- types of paints, including the characteristics and uses of paint materials with various volatile organic compound (VOC) levels and alternative and natural paints
 - materials:
 - paints:
 - water-based
 - solvent-based
 - two-pack
 - textures
 - cleaning solvents
 - coatings
 - fillers and adhesives
 - wall and decorative covering materials
 - quality requirements for handling painting and decorating materials
 - types, titles, packaging and storage requirements for common painting and decorating materials
 - painting and decorating terminology
 - Australian Paint Approval Scheme (APAS) classifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD2012 Use painting and decorating tools and equipment

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD2012A Use painting and decorating tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to select, use, store and maintain a range of commonly used painting and decorating tools and equipment.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction industry training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Review work instructions to use painting and decorating

tools and equipment.

- 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
- 2 Select and prepare hand and power tools and equipment.
 - 2.1 Select tools and equipment, including personal protective equipment (PPE) for the task and identify their functions, limitations and safe methods of operation.
 - 2.2 Fit personal protective equipment (PPE) as required for each task.
 - 2.3 Check tools, equipment and hoses for serviceability, leads are tagged and rectify and report faults.
 - 2.4 Check and maintain power tool and equipment guards, retaining bolts, couplings, gauges and controls.
 - 2.5 Conduct pre-operational checks according to manufacturers' recommendations.
- 3 Use tools and equipment.
 - 3.1 Follow start-up and shut-down procedures according to workplace practices.
 - 3.2 Use tools and equipment safely and effectively.
 - 3.3 Locate tools and equipment safely when not in immediate use.
 - 3.4 Clean, check, maintain and store tools and equipment on conclusion of task.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD2012A Use painting and decorating tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD2012 Use painting and decorating tools and equipment

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD2012A Use painting and decorating tools and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by using, maintaining and storing all the tools and equipment listed below over the course of three separate painting and decorating tasks, with each task involving an area of at least six square metres.:

- brushware and accessories
- buckets
- covers and drop sheets
- duster brushes
- filling knives and blades
- hammers and nail punches
- hand sanders
- heat guns
- mechanical sanders, including:
 - belt
 - disc
 - orbital
 - random orbital
- paint pots
- paint stirrers
- putty knives
- roller frames and accessories
- scrapers
- wire brushes
- high-pressure washers
- water treatment units.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to using painting and decorating tools and equipment
- environmental requirements relevant to using painting and decorating tools and equipment
- types, characteristics, uses and limitations of painting and decorating hand tools, power tools and equipment, including:
 - brushware and accessories
 - buckets
 - covers and drop sheets
 - duster brushes
 - filling knives and blades
 - hammers
 - hand sanders
 - heat guns
 - mechanical sanders:
 - belt
 - disc
 - orbital
 - random orbital
 - nail punches
 - paint pots
 - paint stirrers
 - putty knives
 - roller frames and accessories
 - scrapers
 - wire brushes
 - high-pressure washers
 - water treatment units
 - dust extraction units.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD2013 Remove and replace doors and door and window components

Modification History

Release 2 This version first released with CPC Property Services Training Package Release 5.1.

Correction to Elements and Performance Criteria. Removal of duplicate Performance Criteria 4.5.

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD2013A Remove and replace doors and door and window components. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to remove and replace doors and door and window furniture for the purpose of painting.

The unit includes planning and preparation for the work, removal and replacement of doors and door and window furniture, and completion of clean-up activities.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction industry training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of CPCCWHS1001 *Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Plan and prepare. | 1.1 Review work instructions for requirements to remove and replace doors and windows components. |
| | 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications and workplace requirements. |
| | 1.3 Select and fit personal protective equipment (PPE) as required for each task. |
| | 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.5 Select tools and equipment, including personal protective equipment (PPE), check for serviceability and rectify/report any faults. |
| 2 Remove door and window components. | 2.1 Remove door and window components carefully, including doors, screens and fittings and door and window furniture. |
| | 2.2 Remove components without damaging surrounding areas and objects. |
| | 2.3 Locate or store components safely. |
| 3 Install glass to doors and windows. | 3.1 Use safe handling techniques for glass to remove old panes of glass from doors and windows safely, without undue damage and demonstrating correct hacking procedure. |
| | 3.2 Determine the correct fixing method for installation of replacement glass. |
| | 3.3 Measure and source type and style of glass for replacement in keeping with the finish and purpose of door or window. |
| | 3.4 Clean, repair and prime door or window aperture before |

- installation of replacement glass.
- 3.5 Use safe handling techniques for glass to install replacement glass to specification and required finish.
- 4 Replace doors and door and window furniture.
- 4.1 Handle, place, hang and fix doors carefully into original position.
- 4.2 Refit door furniture and fix back into place without marking door or surrounds.
- 4.3 Refit window furniture and fix back into place without marking window surfaces or surrounds.
- 4.4 Replace screens securely in position without damage to surrounds.
- 5 Clean up.
- 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
- 5.2 Clear work area and reuse, recycle or dispose of materials and waste.
- 5.3 Check, maintain and store tools and equipment and rectify/report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD2013A Remove and replace doors and door and window components.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD2013 Remove and replace doors and door and window components

Modification History

Release 2 This version first released with CPC Property Services Training Package Release 5.1.

Correction to Elements and Performance Criteria. Removal of duplicate Performance Criteria 4.5.

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD2013A Remove and replace doors and door and window components. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by safely and effectively removing and replacing as a minimum:

- one door with an independent screen
- furniture from two different door types:
 - closers
 - handles
 - hinges
 - latches
 - locks
 - safety chains
 - screens
- furniture from two different window types with at least one having independent screens:
 - brackets
 - catches
 - handles
 - locks
 - screens
 - stays.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to removing and replacing doors and door and window components
- environmental requirements relevant to removing and replacing doors and door and window components
- correct and safe procedures for removal and replacement of glass
- safe handling techniques for glass
- door and window furniture removal and replacement techniques for:
 - door furniture:
 - closers
 - handles
 - hinges
 - latches
 - locks
 - safety chains
 - screens
 - window furniture:
 - brackets
 - catches
 - handles
 - locks
 - screens
 - stays
- painting and decorating and basic carpentry terminology relevant to removing and replacing doors and door and window components
- quality requirements relevant to removing and replacing doors and door and window components
- types, uses and limitations of tools used in the removal and replacement of door and window furniture.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3021 Prepare existing coated surface for painting

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Property Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCPD3021A Prepare surfaces for painting.
Minor title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to restore, repair and prepare different material surfaces for the application of paint.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Review work instructions to prepare surfaces for painting.
 - 1.2 Plan all work to meet relevant requirements of Australian Standards, work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and rectify/report any faults.
 - 2 Prepare previously coated surfaces.
 - 2.1 Determine and test condition and nature of existing substrate and surface material by performing adhesion test.
 - 2.2 Select surface preparation method in accordance with environmental, finish and substrate requirements.
 - 2.3 Prepare surfaces by removing unwanted coatings and loose debris.
 - 2.4 Repair surface defects, apply suitable primer, stop, fill and sand imperfections to smooth finish ready for painting.
 - 3 Clean up.
 - 3.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 3.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 3.3 Check and maintain tools and equipment and clean with appropriate solvents.
 - 3.4 Dispose of paint waste and of water and solvents used in

cleaning tools and equipment in an environmentally sustainable manner.

- 3.5 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCPD3021A Prepare surfaces for painting.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3021 Prepare existing coated surface for painting

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Property Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCPD3021A Prepare surfaces for painting.
Minor title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing the following previously coated surfaces for painting:

- an external timber surface to a minimum of two square metres
- two internal surfaces
 - one plaster to a minimum of two square metres
 - one timber to a minimum of two square metres
- a metal surface to a minimum of two lineal metres
- a masonry surface to a minimum of two square metres

In preparing these surfaces the following equipment must be used:

- chemical strippers
- drop sheets
- duster brushes
- filling knives and blades
- hammers
- hand sanders
- heat removal equipment
- mechanical sanders
- nail punches
- scrapers
- water blasters
- wire brushes.

All work must be performed to the standard required in the workplace and must meet the requirements of Australian Standards, work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to preparing existing coated surface for painting
- environmental requirements relevant to preparing existing coated surface for painting
- corrosion processes and techniques for the protection of metals relevant to preparing existing coated surface for painting
- hazards and risk reduction procedures associated with lead, asbestos, solvents, chemicals, silica and dust
- techniques for removing substrate and surface contaminants:
 - dust
 - films of grease
 - mild chalking
 - mild efflorescence
 - mould
 - paint films that are:
 - blistering
 - corrosion
 - flaking
 - peeling
 - cracking
 - smoke damage
- prevention and/or rectification procedures for surface coating defects
- procedures, products and techniques associated with preparation of existing surfaces:
 - chemical stripping
 - grinding
 - sanding
 - scraping (mechanical and hand)
 - use of heat guns
 - washing down
 - water blasting
- types, characteristics, uses and limitations of tools and equipment:
 - drop sheets
 - duster brushes
 - filling knives and blades
 - hammers

- hand sanders
- heat removal equipment
- mechanical sanders
- nail punches
- scrapers
- water blasters
- wire brushes
- adhesion testing and remedial actions
- quality requirements relevant to preparing existing coated surface for painting.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3022 Apply paint by brush and roller

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3022A Apply paint by brush and roller. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply brushed or rolled paint coatings to different materials to form a protective and decorative painted finish.

The unit includes preparation of the work area, mixing of materials, application of paint, finishing of the surface and completion of clean-up activities.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction
1 industry

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Review work instructions to apply paint by brush and roller.
 - 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Conduct work with regard to responsibilities in heritage-listed buildings.
 - 1.4 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Identify materials appropriate to the work application, calculate quantities and prepare, handle safely and locate ready for use.
 - 1.7 Select tools and equipment, check for serviceability and report any faults.

- 2 Prepare work area and materials.
 - 2.1 Check that materials and substrate surfaces are prepared in accordance with manufacturers' recommendations and relevant Australian Standards.
 - 2.2 Protect surrounding surfaces with drop sheets, masking or removal of objects.
 - 2.3 Check that where doors, windows and associated furniture are removed they are safely stacked, stored and protected.
 - 2.4 Check work site to ensure provision of adequate ventilation and implementation of precautions to prevent fire and explosion.
 - 2.5 Implement measures to ensure application area remains free of dust and foreign matter.
 - 2.6 Mix each of oil based, water based and two pack paint, to designed proportion, consistency, specified ratio and drying time.

- 2.7 Stir paint and colours thoroughly using separate stirring sticks or other devices.
- 3 Apply paint with brush or roller.
 - 3.1 Select brush, roller or brush/roller combination for surface profile, size of area, type of paint and finish.
 - 3.2 Apply paint to achieve required level of opacity, finish, texture and sheen.
- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 4.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 4.3 Check and maintain tools and equipment and clean with appropriate solvents.
 - 4.4 Dispose of paint waste and water and solvents used in cleaning painting equipment in an environmentally sustainable manner.
 - 4.5 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3022A Apply paint by brush and roller.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3022 Apply paint by brush and roller

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3022A Apply paint by brush and roller. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by applying paint finishes by brush, roller or a brush roller combination to a range of surfaces, including:

- one room, at a minimum of three metres by three metres, including the ceiling
- a timber panel door:
 - one oil based application
 - one water based application
- a flush door:
 - one oil based application
 - one water based application
- a timber window, including architrave and frame with moving parts (e.g. box frame, hopper and awning)
- a timber surface to minimum of one square metre using two pack.

All finishes must be to specification, including in terms of defects, thickness, sheen, opacity, colour and sharpness.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying paint by brush and roller
- environmental requirements relevant to applying paint by brush and roller
- processes for the calculation of material requirements relevant to applying paint by brush and roller
- quality requirements relevant to applying paint by brush and roller

- responsibilities with regard to:
 - environmental requirements
 - heritage listed buildings
- paint coatings:
 - solvent-based
 - two-pack
 - water repellent for timber
 - water-based
 - sealers
 - primers
 - sealer and undercoats
 - intermediate coats
 - finish coats
- surface coating technology, including specification of paint systems for interior and exterior painting projects to maximise durability, protection and aesthetic considerations
- testing processes for paint applied by brush and roller
- theoretical principles relating to adhesion and cohesion of paint
- theoretical principles relating to pigmentation and colouring agents, drying and curing processes and the role of solvents
- wet film thickness tests
- types, uses and limitations of commonly used tools and equipment:
 - brushware and accessories
 - drop sheets
 - paint pots and buckets
 - paint stirrers
 - roller frames
 - roller sleeves, lambs' wool rollers, foam rollers, micro-fibre rollers, nylon rollers and applicator pads
- variances in work carried out within sectors of painting and decorating industry for:
 - new building (residential, commercial and high rise)
 - maintenance, renovation and refurbishment
 - restoration
 - conservation.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3023 Apply texture coat paint finishes by brush, roller and spray

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCPD3023A Apply texture coat paint finishes by brush, roller and spray. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply texture coat paint finishes to different surfaces using brush, roller and spray.

The unit includes preparation of the work area and materials, application of the texture coat paint and completion of clean-up activities.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Plan and prepare. | 1.1 Review work instructions to apply texture coat paint finishes by brush, roller and spray. |
| | 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements. |
| | 1.3 Conduct work with regard to responsibilities in conservation areas and heritage-listed buildings. |
| | 1.4 Select and fit personal protective equipment (PPE) as required for each task. |
| | 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Identify materials appropriate to the work application, calculate quantities and prepare, handle safely and locate ready for use. |
| | 1.7 Select tools and equipment, check for serviceability and report any faults. |
| 2 Prepare materials and application area. | 2.1 Check that materials and substrate surfaces are prepared in accordance with manufacturers' recommendations and relevant Australian Standards. |
| | 2.2 Protect surrounding surfaces by drop sheets, masking or removal of objects. |
| | 2.3 Implement measures to ensure application area remains free of dust and foreign matter. |
| | 2.4 Set-up area to suit selected application system and prepare system and equipment for use, including checking fittings for function and security. |
| | 2.5 Mix and adjust texture coat viscosity for application process. |

- | | | | |
|---|---|-----|--|
| 3 | Apply texture coat by brush and roller. | 3.1 | Use brushes and rollers following standard operating procedures and manufacturers' recommendations. |
| | | 3.2 | Identify defects in coating and take corrective action to achieve required finish. |
| 4 | Apply texture coat by spray. | 4.1 | Set up spray system to manufacturers' specifications, including checking adjustment by spraying a sample panel. |
| | | 4.2 | Apply texture coat paint using spray system to achieve specified finish. |
| | | 4.3 | Identify defects in coating and take corrective action to achieve required finish. |
| 5 | Clean up. | 5.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment. |
| | | 5.2 | Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile. |
| | | 5.3 | Check and maintain tools and equipment and clean with appropriate solvents. |
| | | 5.4 | Dispose of paint waste and of water and solvents used in cleaning tools and equipment in an environmentally sustainable manner. |
| | | 5.5 | Store tools, equipment and sealed unused materials to avoid spontaneous ignition. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3023A Apply texture coat paint finishes by brush, roller and spray.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3023 Apply texture coat paint finishes by brush, roller and spray

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCPD3023A Apply texture coat paint finishes by brush, roller and spray. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing and applying texture coat paints using:

- brush and roller
 - complete a wall from floor to ceiling with two hard edges to a minimum of six square metres
- by spray to:
 - complete a wall, from floor to ceiling with two hard edges to a minimum of six square metres

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying texture coat finishes by brush and roller
- environmental requirements relevant to applying texture coat finishes by brush and roller
- waste management:
 - materials storage and environmentally sustainable waste management, including correct disposal of water-based, latex-based and solvent-based paints
 - solid waste and paint sludge disposal techniques and relevant legislation, including Environmental Protection Authority (EPA) and local council regulations
- requirements of AS2311 Guide to the painting of building

- processes for the calculation of material requirements relevant to applying texture coat finishes by brush and roller
- quality requirements relevant to applying texture coat finishes by brush and roller
- surface preparation techniques related to texture coatings
- texture coat paint systems technology
- common defects in texture coats, and methods of rectification
- applicator system types, characteristics, uses and limitations relevant to applying texture coat finishes by brush and roller
- types, characteristics, uses and limitations of tools and equipment relevant to applying texture coat finishes by brush and roller
- texture coatings and their properties, uses and limitations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3024 Apply paint by spray

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3024A Apply paint by spray. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply paint by spray onto different surfaces to form a protective paint finish.

The unit includes preparation of materials and application area, setting up and testing of the spray equipment, application of paint and completion of clean-up activities.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction
1 industry

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Review work instructions to apply paint by spray.
 - 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
- 2 Prepare materials and application area.
 - 2.1 Check that materials and substrate surfaces are prepared in accordance with manufacturers' recommendations and relevant Australian Standards.
 - 2.2 Protect surrounding surfaces with drop sheets, masking or removal of objects.
 - 2.3 Check that where doors, windows and associated furniture are removed they are safely stacked, stored and protected.
 - 2.4 Check work site to ensure provision of adequate ventilation and implementation of precautions to prevent fire and explosion.
 - 2.5 Implement measures to ensure application area remains free of dust and foreign matter.
 - 2.6 Set up area to suit selected spray system.
 - 2.7 Mix and adjust viscosity of paint to allow for application process for spray paint finishing materials.
- 3 Set up and test spray equipment.
 - 3.1 Set up and test spray system equipment, accessories and lines to manufacturers' specifications.
 - 3.2 Check fittings are secure.

- 3.3 Test safety devices are performing to manufacturers' specifications and report defects.
- 4 Apply paint using spray system.
 - 4.1 Operate spray equipment following standard operating procedures and manufacturers' recommendations.
 - 4.2 Identify defects in coating and take corrective action to achieve required finish.
 - 4.3 Apply paint using application technique to achieve an even finish with required opacity and sheen levels and to specification.
- 5 Clean up.
 - 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 5.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 5.3 Check and maintain spray system, tools and equipment and clean with appropriate solvents.
 - 5.4 Dispose of paint waste and of water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
 - 5.5 Store spray system, tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3024A Apply paint by spray.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3024 Apply paint by spray

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3024A Apply paint by spray. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- applying paint by spray using one alkyd or solvent paint system to a surface of at least six square metres
- airless application and back rolling of acrylic paint system to a surface of at least 50 square metres of:
 - plaster surface
 - masonry surface
 - timber surface
- applying paint by spray using high volume, low pressure (HVLP) spray, or air assisted airless spray, to a surface of at least six square metres
- applying paint by spray to both faces of a standard size door.

The above work must include applying paint by spray to walls, ceilings, architraves and skirting.

All work must be to specification and be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- technical data sheets and safety data sheets (SDS)
- safety requirements relevant to applying paint by spray
- environmental requirements relevant to applying paint by spray
- workplace and equipment safety requirements including respiratory protection
- paint types, their uses and limitations for spray painting:
 - solvent-based (alkyd, urethane, urethane/alkyd, urethane oil or modified alkyd resins)
 - two pack including isocyanate

- water based
- water repellents for timber
- low odour and low-VOC (Volatile Organic Compound) paint
- alternative and natural paint and paint materials
- painting and decorating terminology relevant to applying paint by spray
- preparatory materials relevant to spray operations
- processes for the calculation of material requirements relevant to applying paint by spray
- quality requirements relevant to applying paint by spray
- rules, regulations, Australian Standards and codes of practice of spray painting
- solid waste and paint sludge disposal techniques and relevant legislation, including Environmental Protection Authority (EPA) and local council regulations
- injection injury
- corrective actions including back rolling
- types, characteristics, uses and limitations of tools and equipment:
 - brushes
 - drop sheets
 - masking equipment
 - respirators
 - sanders
 - vacuum cleaners
 - spray equipment, accessories and lines:
 - hoses
 - regulators
 - spray guns
 - spray tips and filters
 - spray systems:
 - air-assisted spray units
 - airless spray units
 - diaphragm and piston airless spray unit (electrical, pneumatic and petrol)
 - high volume, low pressure (HVLPP) spray applications
 - electrostatic spray systems
 - spray tips, filters and fittings
- techniques for the application of paint by spray
- compatibility of surface coating to substrates.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3025 Match specific paint colours

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to unit mapping.
- Release 1 This version first released with CPC Property Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCPD3025A Match specific paint colours.
Minor title change. Updated to meet to the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to colour-match new and existing painting finishes.

The unit includes matching of paint colour to a specified sample.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction
1 industry

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|---|
| 1 Plan and prepare. | 1.1 Review work instructions to interpret and match paint colour. |
| | 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements. |
| | 1.3 Select tools and equipment, including personal protective equipment (PPE), check for serviceability and report any faults. |
| 2 Match paint colour to sample. | 2.1 From a provided colour sample, determine paint type and sheen level. |
| | 2.2 Select paint type, paint base and colourants for colour match. |
| | 2.3 Mix and match colour against sample and allow to dry. |
| | 2.4 Test dry paint to establish accuracy of match of colour, adjusting and repeating testing process as required. |
| | 2.5 Record details of colourants used to achieve the paint match. |
| 3 Clean up. | 3.1 Clear work area and check and maintain tools and equipment and clean with appropriate solvents without damage. |
| | 3.2 Dispose of water and solvents used in cleaning tools and equipment in an environmentally sustainable manner. |
| | 3.3 Store tools, equipment and sealed unused materials to avoid spontaneous ignition. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3025A Match specified paint colour.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3025 Match specific paint colours

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to unit mapping.
- Release 1 This version first released with CPC Property Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCPD3025A Match specific paint colours.
Minor title change. Updated to meet to the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by colour-matching a minimum of four previously-painted samples:

- two different solvent-based paints
- two different latex/acrylic paints.

The above samples must include:

- a minimum of two samples in-situ
- two different sheen levels
- use of a minimum of three colour tints in each colour to be matched.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to interpreting and matching specified paint colours
- environmental requirements relevant to interpreting and matching specified paint colours
- colour principles related to monochromatic, complementary, split complementary, analogous and triadic colours
- colour theory related to primary, secondary, tertiary and intermediate colours
- tints, tones, pastels and shades and their effect in relation to colour
- use of paint colourants relevant to interpreting and matching specified paint colours

- use of tint bases relevant to interpreting and matching specified paint colours
- use of advancing and receding colour schemes relevant to interpreting and matching specified paint colours
- colours used in heritage painting or restoration
- effect, over time, of light on colours
- factors that affect the apparent colour of paint:
 - age and deterioration of painted sample if in-situ
 - colour and opacity of the paint
 - colour considerations regarding durability of colours in exterior locations
 - colour of drapes and other furnishings
 - colour of surface covered by paint
 - gloss level and paint type
 - lighting conditions for paint-matching
- types, characteristics, uses and limitations of tools and equipment:
 - hand-held spectrometers
 - colorant dispenser
 - mixing receptacles
 - paintbrushes
 - stirring implements
 - mechanical paint mixers (shakers)
- use of the colour wheel in paint-matching
- presentation of paint formulas
- quality requirements relevant to matching paint colours.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3026 Apply stains and clear timber finishes

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3026A Apply stains and clear timber finishes. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply stains and clear timber finishes to different material surfaces, including previously stained or finished timber, to form a protective and decorative finish.

The unit includes preparation of the work area and materials, staining of bare timber, application of clear finishes and completion of clean-up activities.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction
1 industry

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Review work instructions to apply stains and clear timber finishes.
 - 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.

- 2 Prepare work area and surfaces.
 - 2.1 Strip and prepare existing stained or finished surfaces for application using appropriate techniques.
 - 2.2 Protect surrounding surfaces with drop sheets, masking or removal of objects.
 - 2.3 Check that where doors, windows and associated furniture are removed they are safely stacked, stored and protected.
 - 2.4 Check work site to ensure provision of adequate ventilation and implementation of precautions to prevent fire and explosion.
 - 2.5 Implement measures to ensure application area remains free of dust and foreign matter.

- 3 Stain bare timber surface.
 - 3.1 Match stain colour to previously stained timber.
 - 3.2 Select application method for the specified surface, allowing for aesthetics durability, area size and type of finish.
 - 3.3 Select materials appropriate to the work application, calculate quantities and prepare and handle safely.
 - 3.4 Select tools and equipment, check for serviceability and rectify and report any faults.
 - 3.5 Prepare stain to required proportions and consistency.

- 3.6 Apply stain to timber surface according to work instructions.
- 3.7 Mix colour-matched wood filler and apply to timber.
- 4 Apply clear finish.
 - 4.1 Apply coats of selected clear finish to achieve required finish and sheen.
 - 4.2 Allow required drying and curing time between coats.
- 5 Clean up.
 - 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 5.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 5.3 Check and maintain tools and equipment and clean with appropriate solvents.
 - 5.4 Dispose of paint waste and water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
 - 5.5 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3026A Apply stains and clear timber finishes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3026 Apply stains and clear timber finishes

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3026A Apply stains and clear timber finishes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing surfaces and applying stains and clear timber finishes to:

- two different previously-treated timber surfaces, each a minimum of two square metres or two lineal metres
- three different bare timber surfaces, one with tannin stains, each a minimum of two square metres or two lineal metres.

In completing these tasks, a minimum of the following materials must be used:

- timber bleach
- one oil-based stain product
- one water-based timber stain
- one spirit-based timber stain
- one water-based clear finish
- one oil-based clear finish
- one liming white finish
- sanding sealer
- stopping and filling applications.

All finishes must be to specification.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying stains and clear timber finishes
- environmental requirements relevant to applying stains and clear timber finishes

- materials storage and environmentally sustainable waste management, including correct disposal of water-based, latex-based and solvent-based paints and finishes
- hazards associated with solvents, chemicals and dust relevant to applying stains and clear timber finishes
- types, properties, uses and limitations of fillers, clear timber finishes and timber stains:
 - grain fillers (water, spirit or oil)
 - putty
 - single pack clear finish
 - timber stains (water, spirit, oil or slightly pigmented varnish/polyurethane)
 - natural timber oil and preservatives
 - acrylic clear and two pack epoxy clear, shellac, tinting agents and waxes
 - water and alkyd clears
 - sanding sealers
 - lacquers
 - timber bleaches
 - two pack polyurethane
 - water repellents
 - timber preservatives
- application methods:
 - brush
 - paint pad (sponge)
 - rag
 - roller
 - spray
- finishes, including matt, satin and gloss
- tannin stains
- types, characteristics, uses and limitations of tools and equipment relevant to applying stains and clear timber finishes
- processes for the calculation of material requirements relevant to applying stains and clear timber finishes
- quality requirements relevant to applying stains and clear timber finishes.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3027 Remove and apply wallpaper

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Property Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCPD3027A Apply wallpaper. Minor title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply wallpaper to walls of different materials to form a protective and decorative finish.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Review work instructions for details of requirements to apply wallpaper.
 - 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Prepare plan for hanging wallpaper.
 - 1.4 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Identify the types and quantities of materials required for the task and safely prepare and position ready for use.
 - 1.7 Check wallpaper for conformity to pattern number, batch number and other shading requirements.
 - 1.8 Select tools and equipment, check for serviceability and report any faults.
 - 2 Remove wallpaper and prepare surface.
 - 2.1 Determine type, condition and nature of existing wallpaper.
 - 2.2 Select surface preparation method in accordance with environmental, finish and substrate requirements.
 - 2.3 Remove wallpaper using appropriate tools.
 - 2.4 Prepare surfaces by removing loose debris.
 - 2.5 Repair surface defects and imperfections, and stop, fill and sand to smooth finish.
 - 2.6 Conduct adhesion test and take any required remedial action.
 - 3 Prepare to apply
 - 3.1 Seal wall using appropriate material.

- wallpaper.
- 3.2 Prepare adhesives in accordance with safe workplace procedures.
 - 3.3 Apply size coating to work area and allow to dry.
- 4 Apply wallpaper/lining paper to walls and ceilings.
- 4.1 Apply wallpaper/ lining paper ensuring an even surface, seams are butted, paper is plumb and pattern matches.
 - 4.2 Trim accurately around fittings.
 - 4.3 Remove residue for a clean finish.
- 5 Clean up.
- 5.1 Clean-up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 5.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 5.3 Check and maintain tools and equipment and clean with appropriate solvents.
 - 5.4 Dispose of waste and water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
 - 5.5 Store tools, equipment and unused materials in accordance with workplace practices.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3027A Apply wallpaper.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3027 Remove and apply wallpaper

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Property Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCPD3027A Apply wallpaper. Minor title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- removing a minimum of six square metres of wallpaper
- preparing and applying a minimum of six square metres of lining paper
- preparing and applying a minimum of six square metres of vinyl wallpaper
- preparing and applying a minimum of six square metres of unpasted wallpaper.

In removing this wallpaper, the following procedures, products and techniques must be included:

- dry stripping
- soaking
- steam stripping

In applying this wallpaper, a minimum of the following must be included:

- walls and internal and external corners
- a reveal
- a window
- an arch
- walls containing power points and switches
- a ceiling to a minimum of three metres by three strips wide
- one set pattern
- one drop pattern
- one random pattern.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying wallpaper
- environmental requirements relevant to applying wallpaper
- painting and decorating terminology
- use and application of woven and non-woven wallpaper
- plans, drawings and specifications relevant to applying wallpaper
- plans for hanging wallpaper
- common wallpapering defects
- compatibility of preparatory materials and wallpaper
- types of wallpaper:
 - borders
 - lining paper
 - unpasted and ready pasted wallpapers (simplex and duplex)
 - vinyl wallpaper
 - washable wallpaper
 - paste on wall
- types of wallpaper adhesives:
 - cellulose
 - latex
 - acetate
 - starch
 - other special adhesive blends
- preparation for wallpaper applications for walls:
 - set plaster
 - flat surfaces
 - curved surfaces
- surface preparation for:
 - fibre cement products
 - fibrous plaster
 - medium density fibre board
 - plasterboard
 - lined surface
 - rendered surface
- types, characteristics, uses and limitations of tools and equipment relevant to applying wallpaper
- procedures used to apply straight pattern match, drop pattern match and random match wallpapers
- use of laser levels relevant to applying wallpaper

- procedures, products and techniques associated with removal of wallpaper, including:
 - dry stripping
 - soaking
 - steam stripping
- processes for the calculation of material requirements relevant to applying wallpaper
- quality requirements relevant to applying wallpaper
- surface preparation techniques for the application of wallpaper
- types and properties of wall coverings and their suitability to various substrates
- types, uses and limitations of commonly used wallpaper adhesives
- wallpaper hanging processes and techniques.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3028 Apply decorative paint finishes

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3028A Apply decorative paint finishes. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply decorative paint finishes to a range of different material surfaces.

The unit includes:

- preparation of the application area
- application of:
 - mirror paint finishes
 - broken colour effects
 - modern acrylic finishes
 - lining by brush
 - basic stencilling
 - basic special effects
- completion of clean-up activities.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction
1 industry

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-----------------------------|---|
| 1 Plan and prepare. | 1.1 Review work instructions to apply decorative paint finishes and select method of application. |
| | 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements. |
| | 1.3 Select and fit personal protective equipment (PPE) as required for each task. |
| | 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.5 Identify the types and quantities of materials required for the task and safely prepare and position ready for use. |
| | 1.6 Select tools and equipment, check for serviceability and report any faults. |
| 2 Prepare application area. | 2.1 Check that materials and substrate surfaces are prepared in accordance with manufacturer recommendations and relevant Australian Standards. |
| | 2.2 Protect surrounding surfaces by drop sheets, masking or removal of objects. |
| | 2.3 Check work site to ensure provision of adequate ventilation and implementation of precautions to prevent fire and explosion. |
| | 2.4 Implement measures to ensure application area remains free of dust and foreign matter. |
| | 2.5 Set-up area to apply decorative paint finishes. |

- | | | | |
|---|--------------------------------|-----|---|
| 3 | Apply mirror paint finish. | 3.1 | Apply prime and intermediate coats, allow to dry thoroughly and sand to a smooth, even finish. |
| | | 3.2 | Adjust paint viscosity to suit climatic conditions and selected application method. |
| | | 3.3 | Prepare surface for final coat of mirror paint finish. |
| | | 3.4 | Apply final coat without imperfections, flowing out to an even, smooth finish and meeting all requirements. |
| 4 | Apply broken colour effects. | 4.1 | Apply ground coat evenly to prepared surface to specified colour and consistency. |
| | | 4.2 | Apply scumble glaze to prepared base coat and produce broken colour effect to match sample. |
| | | 4.3 | Apply clear coating to achieve an even finish to specified sheen level. |
| 5 | Apply modern acrylic finishes. | 5.1 | Prepare surface for application of acrylic finish. |
| | | 5.2 | Apply acrylic finish to achieve an even finish to specification. |
| 6 | Apply lining by brush. | 6.1 | Set out lining work to designed effect on prepared surface. |
| | | 6.2 | Select paint materials, applicators and brushware for lining work. |
| | | 6.3 | Apply application techniques to produce designed lining work effects and finish to requirements. |
| 7 | Apply basic stencilling. | 7.1 | Use specified transfer method and cut design accurately using a register mark. |
| | | 7.2 | Lay out stencil design on recommended material. |
| | | 7.3 | Place and tape initial stencil to designed location. |
| | | 7.4 | Apply paint to achieve designed effect. |

- | | | | |
|---|-------------------------------|-----|--|
| 8 | Apply basic special finishes. | 8.1 | Select special effect materials, applicators and brushware. |
| | | 8.2 | Apply a range of traditional and modern special finishes to produce specified effects and finish. |
| 9 | Clean up. | 9.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment. |
| | | 9.2 | Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile. |
| | | 9.3 | Check and maintain tools and equipment and clean with appropriate solvents. |
| | | 9.4 | Dispose of paint waste and water and solvents used in cleaning tools and equipment in an environmentally sustainable manner. |
| | | 9.5 | Store tools, equipment and sealed unused materials to avoid spontaneous ignition. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3028A Apply decorative paint finishes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3028 Apply decorative paint finishes

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3028A Apply decorative paint finishes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by completing the following decorative finishes to specifications:

- a mirror finish to one side of a flat panel door
- a mirror finish to one side of a four-panel door
- two broken colour effects on a minimum of a six square metre surface, including an internal corner
- two modern acrylic finishes, each on a minimum six square metre surface
- use of a minimum of three lineal metres of lining within a decorative finish on a minimum six square metre surface
- a basic stencil finish repeated six times and including an internal corner
- basic imitation marbling, imitation wood graining, each on a on a minimum of a two square metre surface
- basic gilding special effects on a ceiling rose or decorative feature.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying decorative paint finishes
- environmental requirements relevant to applying decorative paint finishes
- types, properties, uses and limitations of decorative paint finishes materials
- types, characteristics, uses and limitations of tools and equipment relevant to applying decorative paint finishes
- Australian Paint Approval Scheme (APAS) classifications
- compatibility of surface coatings to substrates
- decorative painted finishes technology

- techniques for traditional and modern special finishes:
 - broken colour effects
 - lines
 - mirror finish
 - gilding
 - stencilling
 - basic imitation marbling
 - basic imitation wood graining
- techniques for acrylic finishes:
 - suede
 - metalescence
 - pearlescence/illuminescence
 - lime washes
- materials storage and environmentally sustainable waste management, including correct disposal of water-based, latex-based and solvent-based paints
- plans, drawings and specifications relevant to applying decorative paint finishes
- processes for the calculation of material requirements relevant to applying decorative paint finishes
- quality requirements relevant to applying decorative paint finishes
- solid waste and paint sludge disposal techniques and relevant legislation, including Environmental Protection Authority (EPA) and local council regulations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3029 Remove graffiti and apply anti-graffiti coatings

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3029A Remove graffiti and apply protective coatings. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to remove graffiti and apply preventative materials to different surfaces to form graffiti-resistant surface systems.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.	1.1 Review work instructions to remove graffiti and apply protective coatings.
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- 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protection equipment PPE as required for each task.
 - 1.4 Inspect work site, inspect and identify existing coating, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Identify materials appropriate to the work application, calculate quantities and prepare, handle safely and locate ready for use.
 - 1.6 Select tools and equipment, check for serviceability and rectify and report any faults.
- 2 Prepare site and materials.
 - 2.1 Set-up site area for graffiti removal and preventative application processes.
 - 2.2 Protect surrounding surfaces with drop sheets, masking or removal of objects.
 - 2.3 Check work site to ensure provision of adequate ventilation and implementation of precautions to prevent fire and explosion.
 - 2.4 Install storm water protection systems.
- 3 Remove graffiti.
 - 3.1 Apply selected removal processes to remove graffiti.
 - 3.2 Remove graffiti from affected area following manufacturers' specifications.
- 4 Apply anti-graffiti coating.
 - 4.1 Clean and prepare substrate surfaces for application of sacrificial and non-sacrificial anti-graffiti coatings.
 - 4.2 Prepare and apply selected anti-graffiti coatings following manufacturers' specifications.

- 5 Clean up.
 - 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 5.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 5.3 Check and maintain tools and equipment and clean with appropriate solvents.
 - 5.4 Dispose of paint waste and water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
 - 5.5 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3029A Remove graffiti and apply protective coatings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3029 Remove graffiti and apply anti-graffiti coatings

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3029A Remove graffiti and apply protective coatings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- removing graffiti using two approved removal methods, from two different substrates, each at least two square metres
- preparing and applying one sacrificial anti-graffiti coating on a masonry surface of at least two square metres
- preparing and applying one two-pack non-sacrificial anti-graffiti coating on a metal surface of at least two square metres.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to removing graffiti and applying anti-graffiti coatings
- environmental requirements relevant to removing graffiti and applying anti-graffiti coatings
- storm water protection systems
- safe use of tools and equipment relevant to removing graffiti and applying anti-graffiti coatings
- types, properties, uses and limitations of sacrificial and non-sacrificial preventative coatings
- types, characteristics, uses and limitations of tools and equipment relevant to removing graffiti and applying anti-graffiti coatings
- types and properties of commonly used materials used by graffiti artists
- types, characteristics, uses and limitations of graffiti removal materials
- types, uses, limitations and operating techniques for graffiti removal equipment
- sacrificial and non-sacrificial anti-graffiti material technologies and applications

- surface preparation techniques for anti-graffiti coatings
- manufacturers' specifications relevant to removing graffiti and applying anti-graffiti coatings
- processes for the calculation of material requirements relevant to removing graffiti and applying anti-graffiti coatings
- quality requirements relevant to removing graffiti and applying anti-graffiti coatings.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3030 Apply protective paint coating systems

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3030B Apply protective paint coating systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply specialised paint coating systems as a protective measure against atmospheric conditions, sanitation and hygiene risks and the impacts of high traffic areas.

The unit includes preparation of the work area and materials, application of the coating system and clean-up activities.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Review work instructions to apply protective paint coating systems and select method of application consistent with the job location, type of paint, type and condition of surface and climatic conditions.
 - 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Identify materials appropriate to the work application, calculate quantities and prepare, handle safely and locate ready for use.
 - 1.6 Select tools and equipment, check for serviceability and rectify and report any faults.
- 2 Prepare work site and surfaces.
 - 2.1 Protect surrounding surfaces with drop sheets, masking or removal of objects.
 - 2.2 Ensure ventilation is adequate and implement precautions to prevent fire and explosion.
 - 2.3 Implement measures to ensure application area remains free of dust and foreign matter.
 - 2.4 Determine suitability of surface for protective paint coating and select surface preparation method to meet substrate requirements.
 - 2.5 Prepare surface, repair, stop and fill imperfections, and sand to a smooth finish ready for the protective coating.
 - 2.6 Prepare and mix protective coatings to manufacturers' specifications.
- 3 Apply protective coating.
 - 3.1 Apply and finish protective coating system to requirements.

- 3.2 Perform wet film thickness measurement on wet surface for quality assurance and rectify any issues.
 - 3.3 Perform dry film thickness measurement on dry surface for quality assurance and rectify any issues.
- 4 Clean-up.
- 4.1 Clean-up in accordance with all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 4.2 Identify hazardous material for separate handling by authorised personnel.
 - 4.3 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 4.4 Check and maintain tools and equipment and clean with appropriate solvents.
 - 4.5 Dispose of paint waste and water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
 - 4.6 Store tools and equipment, and seal and segregate unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3030B Apply protective paint coating systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3030 Apply protective paint coating systems

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3030B Apply protective paint coating systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing and applying:

- two different water-based protective paint coating systems:
 - one to a metal surface of at least one square metre
 - one to a masonry surface of at least one square metre
- two different solvent-based protective paint coating systems, one a two-pack system:
 - one to a metal surface of at least one square metre
 - one to a masonry surface of at least one square metre.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying protective paint coating systems
- environmental requirements relevant to applying protective paint coating systems
- Australian Paint Approval Scheme (APAS) classifications
- hazards associated with solvent vapour, chemical fumes, gases, harmful dusts, metal chips, abrasive grit and asbestos fibres
- impact of atmospheric conditions and high traffic on new and existing structures and coatings
- plans, drawings and specifications relevant to applying protective paint coating systems
- processes for the calculation of material requirements relevant to applying protective paint coating systems
- surface preparation methods and tools relevant to applying protective paint coating systems

- protective surface coating products and their uses and limitations:
 - polyurethane primer (two pack)
 - epoxy primer (two pack)
 - high build epoxy
 - high build chlorinated rubber
 - 2-pak polyurethane
 - 2-pak surface tolerant epoxy
 - micaceous iron oxide
 - zinc phosphate primer
 - modified acrylic epoxies
- applications of protective paint coating systems, including:
 - corrosion control
 - decoration
 - hygiene and sanitation protection
 - trafficable areas
- dry and wet testing techniques
- types of commonly used protective paint coatings, their uses and limitations
- quality requirements relevant to applying protective paint coating systems
- materials storage and environmentally sustainable waste management, including correct disposal of water-based, latex-based and solvent-based paints
- solid waste and paint sludge disposal techniques and relevant legislation, including Environmental Protection Authority (EPA) and local council regulations
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3031 Work safely with lead-painted surfaces in the painting industry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3031A Implement safe lead paint and asbestos work practices in the painting industry. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to safely treat lead paint hazards.

The unit includes hazard identification, preparation of the work area, removal of contaminated material, encapsulation of contaminated material and completion of clean-up activities.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Review circumstances in which lead-based paint hazards may be encountered.
 - 1.2 Review work instructions to implement safe lead paint work practices, and test for lead-based paint.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.5 Inspect work site, assess hazards, arrange for lead tests on soils, and apply risk controls.
 - 1.6 Select tools and equipment, check for serviceability and report any faults.
 - 2 Define and prepare work area.
 - 2.1 Select process for the identification, management and treatment of lead-based paints.
 - 2.2 Establish, close off and maintain a safe working area around lead-based painted surfaces using temporary control measures, barriers and signage.
 - 2.3 Remove furnishings and food stuffs cover other surfaces and water storage, and seal doors and windows.
 - 2.4 Apply debris and waste management procedures for control of lead paint contamination from flake, chalk and dust.
 - 2.5 Prepare surface of paint containing lead for removal or covering.
 - 2.6 Position tools and equipment for job requirements.
 - 3 Remove lead paint.
 - 3.1 Select removal processes for paint containing lead.
 - 3.2 Quarantine contamination area and protect people at risk in accordance with regulatory requirements.

- 3.3 Apply removal processes for paint containing lead.
 - 3.4 Select and apply methods for the containment and disposal off-site of paint containing lead to regulatory requirements.
- 4 Apply covering coating to lead-based paint.
 - 4.1 Assess and select methods for applying covering coating of paint containing lead on existing surfaces by over-painting or encapsulation in accordance with regulatory requirements.
 - 4.2 Assess suitability of work area for covering of paint containing lead.
 - 4.3 Apply covering coating to paint containing lead.
 - 4.4 Prepare surface of covering coating for subsequent paint coatings.
- 5 Clean up.
 - 5.1 Arrange for testing of work site to ensure that no further contamination has occurred.
 - 5.2 Clean up meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 5.3 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 5.4 Check and maintain tools and equipment and clean with appropriate solvents.
 - 5.5 Dispose of paint waste and of water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
 - 5.6 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCPD3031A Implement safe lead paint and asbestos work practices in the painting industry.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3031 Work safely with lead-painted surfaces in the painting industry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3031A Implement safe lead paint and asbestos work practices in the painting industry. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- preparing at least 6 square metres of paint containing lead for covering coating
- applying a chemical stripping treatment to of at least 2 square metres/3 lineal metres of paint containing lead
- applying a non-chemical stripping treatment to at least 2 square metres/3 lineal metres of paint containing lead
- using a paint system to cover coat or encapsulate at least 2 square metres/3 lineal metres of paint containing lead.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- industry standards recommendations for lead contamination
- current regulatory requirements and industry standards for safe removal of lead and covering of paint containing lead
- indicators of the presence of paints containing lead
- the application of paints containing lead and implications for removal, covering and encapsulation
- safety requirements relevant to implementing safe lead work practices in the painting industry
- environmental requirements relevant to implementing safe lead work practices in the painting industry
- process for preparing for surfaces for covering or removal of paint containing lead:

- wet scraping and sanding
- dry power sanding
- chemical stripping
- non-chemical stripping
- low temperature heat processes
- types, characteristics, uses and limitations of tools, equipment and materials:
 - chemical strippers (caustic based, flammable and methylene chloride)
 - containment receptacles (heavy duty)
 - disposable heavy duty plastic
 - disposable personal boot covers and coveralls
 - high efficiency particulate accumulator (HEPA) filtered vacuum cleaners and filtered sanders
 - measuring tapes and rules
 - respirators to meet Australian Standards
- testing for presence of lead
- non-chemical and chemical removal processes for lead paint:
 - use of HEPA vacuum and sanders
 - dry scraping
 - wet sanding
 - wet scraping
 - bicarbonate of soda blasting
 - chemical stripping
- products available for chemical stripping treatments, their uses and limitations
- contaminant control techniques and processes for lead-based paint flakes, dust and chalk
- health risks associated with lead, lead-based paint products
- materials storage and environmentally friendly waste management
- plans, drawings and specifications relevant to implementing safe lead work practices in the painting industry
- processes for the calculation of material requirements relevant to implementing safe lead work practices in the painting industry.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3032 Apply advanced wall coverings

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3032A Apply advanced wallpaper techniques. Title change. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply wall coverings to walls and ceilings to form a protective and decorative finish.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Review work instructions for details of requirements to

- apply wall coverings.
- 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Identify the types and quantities of materials required for the task and safely prepare and position ready for use.
 - 1.6 Select tools and equipment, check for serviceability and report any faults.
- 2 Prepare to apply wall coverings.
- 2.1 Prepare surfaces for wall coverings by removing existing coating and loose debris, repairing, stopping and filling imperfections, and sanding to smooth finish.
 - 2.2 Prepare and document plan for hanging wall coverings.
 - 2.3 Check materials for conformity to dye lot, batch number and other shading requirements in accordance with client requirements.
 - 2.4 Prepare adhesives in accordance with requirements.
 - 2.5 Apply size coating to work area.
- 3 Apply wall coverings.
- 3.1 Apply wall coverings to work area ensuring an even surface, seams are butted/double-cut, paper is plumb, and pattern is matched correctly.
 - 3.2 Trim accurately around fittings with minimal impact on surroundings.
- 4 Clean up.
- 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.

- 4.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
- 4.3 Check and maintain tools and equipment and clean with appropriate solvents.
- 4.4 Dispose of waste and water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
- 4.5 Store tools, equipment and unused materials.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3032A Apply advanced wallpaper techniques.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3032 Apply advanced wall coverings

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3032A Apply advanced wallpaper techniques. Title change. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by applying wall coverings for a minimum of two tasks, each for at least six square metres, including:

- one anaglypta
- one wall covering requiring double-cutting on surfaces containing power points, vents and switches from the following -
 - suede grass weaves
 - other commercial grade materials
 - fronrunner
 - linen backed vinyl
 - flock
 - lyncrusta
 - metallic foils
 - photo murals

In performing these tasks, the adhesives used can be cellulose, latex, polyvinyl alcohol (PVA) or starch.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying wall coverings
- environmental requirements relevant to applying advanced wall coverings
- common wall covering defects

- compatibility of preparatory materials and wall coverings
- plans, drawings and specifications relevant to applying wall coverings
- procedures used to apply straight pattern match, drop pattern match and random match wall coverings
- processes for the calculation of material requirements relevant to applying advanced wall coverings techniques
- quality requirements relevant to applying advanced wall coverings techniques
- surface preparation techniques for the application of wall coverings and specialty materials
- types and properties of wall coverings and their suitability to various substrates
- types, uses and limitations of commonly used adhesives relevant to applying advanced wall coverings techniques
- wall coverings hanging processes and techniques
- types of wall coverings and specialty materials:
 - anaglypta
 - flock
 - frontrunner
 - linen backed vinyl
 - lyncrusta
 - metallic foils
 - photo murals
 - suede grass weaves
 - other commercial grade materials
- types of wall coverings adhesives:
 - cellulose
 - latex
 - polyvinyl acetate (PVA)
 - starch
 - other special adhesive blends
- wall coverings applications for walls:
 - set plaster
 - plasterboard
 - fibrous plaster
 - medium density fibre board
 - fibre cement products
 - flat or curved
- wall covering tools and equipment, their uses and limitations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3033 Apply intumescent coatings

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3033A Apply intumescent coatings.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply intumescent coatings to a range of material surfaces.

The unit includes preparation of the application area, application of the specialist coatings and completion of clean-up activities.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction
1 industry

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Review work instructions to apply intumescent coatings.
 - 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Identify materials appropriate to the work application, calculate quantities and prepare, handle safely and locate ready for use.
 - 1.6 Select tools and equipment, check for serviceability and rectify and report any faults.
- 2 Prepare work area and surfaces.
 - 2.1 Set-up area for application processes to suit surfaces to be coated.
 - 2.2 Protect surrounding surfaces with drop sheets, masking or removal of objects.
 - 2.3 Check that where doors, windows and associated furniture are removed they are safely stacked, stored and protected.
 - 2.4 Check work site to ensure provision of adequate ventilation and implementation of precautions to prevent fire and explosion.
 - 2.5 Implement measures to ensure application area remains free of dust and foreign matter.
 - 2.6 Check surface to be coated for sufficient clearance for the expansion of the coating in the case of a fire.
 - 2.7 Strip surface completely of any pre-existing finish.
- 3 Apply priming and intumescent coatings
 - 3.1 Apply priming coat to ensure adhesion of intumescent coating.

- to timber.
- 3.2 Apply intumescent coating by brush, roller or airless spray, maintaining required temperature and humidity.
 - 3.3 Use measuring gauges to determine wet film thickness.
 - 3.4 Apply top/finish coat to manufacturers' specifications.
 - 3.5 Protect the finish against abrasion and humidity during drying and curing.
 - 3.6 Use measuring gauges to determine dry film thickness to ensure completed coat meets manufacturer's specifications.
- 4 Apply priming and intumescent coatings to structural metal.
- 4.1 Blast or wire-brush metal surface to prepare for intumescent coating.
 - 4.2 De-grease galvanised steel.
 - 4.3 Measure the temperature of the surface to ensure it meets the manufacturers' specifications.
 - 4.4 Apply priming coat to ensure adhesion of coating.
 - 4.5 Apply intumescent coating by brush, roller or airless spray, maintaining required temperature and humidity.
 - 4.6 Use measuring gauges to determine wet film thickness.
 - 4.7 Apply top/finish coat to manufacturers' specifications.
 - 4.8 Protect the finish against abrasion and humidity during drying and curing.
 - 4.9 Use measuring gauges to determine dry film thickness to ensure completed coat meets manufacturers' specifications.
- 5 Clean up.
- 5.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 5.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.

- 5.3 Check and maintain tools and equipment and clean with appropriate solvents.
- 5.4 Dispose of paint waste and water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
- 5.5 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3033A Apply intumescent coatings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3033 Apply intumescent coatings

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3033A Apply intumescent coatings.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing and applying the following intumescent coating applications to film thickness specification:

- one application on a minimum two square metre or three linear metre timber surface
- one application on a minimum two square metre or three linear metre structural steel surface.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying intumescent coatings
- environmental requirements relevant to applying intumescent coatings
- manufacturers' specifications for applying intumescent coatings
- materials, including:
 - primers
 - water-based intumescent coatings
 - solvent-based intumescent coatings
 - suitable clear finishes for protection of the coating
 - structural metal, including:
 - beams
 - columns
- job site and humidity requirements
- chemical properties of intumescent coatings
- chemical reaction in fire situation

- coating requirements for structural metal work, including coating performance differences between hollow and concrete-filled structures
- coating requirements for timber
- compatibility of coatings to substrates
- fire resistance level (FRL) rating of intumescent coatings for a range of construction materials
- materials storage and environmentally friendly waste management
- interpreting plans and specifications for intumescent coatings
- processes for the calculation of material requirements relevant to applying intumescent coatings
- quality requirements relevant to applying intumescent coatings
- volume solids behaviour and impact on intumescent coatings performance.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3034 Apply advanced decorative paint finishes

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3034A Apply advanced decorative paint finishes. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to apply advanced decorative paint finishes to a range of different material surfaces.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Review work instructions for details of requirements to apply advanced decorative paint finishes and select |
|---------------------|---|

- method of application.
- 1.2 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Identify the types and quantities of materials required for the task and safely prepare and position ready for use.
 - 1.6 Select tools and equipment, check for serviceability and report any faults.
- 2 Prepare application area.
- 2.1 Check that materials and substrate surfaces are prepared in accordance with manufacturers' recommendations and relevant Australian standards.
 - 2.2 Protect surrounding surfaces with drop sheets, masking or removal of objects.
 - 2.3 Check work site to ensure provision of adequate ventilation and implementation of precautions to prevent fire and explosion.
 - 2.4 Implement measures to ensure application area remains free of dust and foreign matter.
 - 2.5 Set-up area to apply advanced decorative paint finishes.
- 3 Produce advanced imitation effects.
- 3.1 Apply base coat evenly to specified colour and consistency to prepared surface.
 - 3.2 Mix effects medium to designed proportions and colour and apply to produce specified effect.
 - 3.3 Apply clear coating to achieve an even finish to specified sheen level.

- | | | |
|--|-----|--|
| 4 Apply advanced stencilled effects. | 4.1 | Select stencil design and lay-out on recommended material. |
| | 4.2 | Use specified multi-layering transfer method and cut design accurately for multiple colours using a register mark. |
| | 4.3 | Place and tape initial stencil to designed location and apply paint to produce first colour. |
| | 4.4 | Locate subsequent stencils and overlays accurately to pattern with each separate colour applied to produce designed finish. |
| 5 Apply advanced lining. | 5.1 | Set out complex pattern lining to specification using template. |
| | 5.2 | Apply complex pattern lining to appropriate surfaces for decorative purposes. |
| 6 Apply advanced gilding. | 6.1 | Apply size to receive gilding. |
| | 6.2 | Apply gilding finishing techniques, including powders and other specified finishes. |
| 7 Apply large-scale decorative effect. | 7.1 | Set out specified design to surface. |
| | 7.2 | Apply decorative effect to specification. |
| 8 Clean up. | 8.1 | Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment. |
| | 8.2 | Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile. |
| | 8.3 | Check and maintain tools and equipment and clean with appropriate solvents. |
| | 8.4 | Dispose of paint waste and water and solvents used in cleaning tools and equipment in an environmentally |

sustainable manner.

- 8.5 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3034A Apply advanced decorative paint finishes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3034 Apply advanced decorative paint finishes

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3034A Apply advanced decorative paint finishes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by applying the following advanced decorative finishes:

- one marble effect on a minimum three square metre surface
- one wood graining effect on a minimum three square metre surface
- design and cutting of a multi-plate stencil and at least six applications of the stencil in a specified pattern on an appropriate surface
- complex pattern lining on a minimum three lineal metre surface
- a gilded finish to highlight a decorative feature
- a large scale mural or trompe l'oeil.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to applying advanced decorative paint finishes
- environmental requirements relevant to applying advanced decorative paint finishes
- Australian Paint Approval Scheme (APAS) classifications
- types of advanced imitation effects:
 - imitation granite
 - imitation marble
 - lapis effects
 - complex imitation wood grain using inlays
- types of advanced lining, special finishes and techniques:
 - advanced stencils
 - gold leaf and gilding powder

- finishing techniques, including waxes and other finishes
- murals and trompe l'oeil
- achieving advanced imitation effects using:
 - brush-grainer
 - chamois
 - check roller
 - crayons
 - cutters
 - feathers
 - fitches
 - floggers
 - heart grain simulator
 - mottlers
 - over-grainers
 - pencils
 - rubber combs
 - softeners
 - sponges
 - steel combs
 - stippling brushes
 - veining horn
- stencilling tools:
 - cutting boards
 - cutting knives and scalpels
 - drawing and tracing materials
 - stencil brushes
 - stencil materials
- types, properties, uses and limitations of the following materials relevant to decorative finishes:
 - clear finishes
 - fillers
 - linseed oil
 - manufacturers' proprietary products
 - oil-based products
 - scumbling mediums
 - stainers
 - terebine dryers
 - water-based products
 - waxes
- colour fleck materials and application techniques

- compatibility of surface coatings to substrates
- decorative painted finishes technology
- materials storage and environmentally sustainable waste management, including correct disposal of water-based, latex-based and solvent-based paints
- painting and decorating terminology relevant to applying advanced decorative paint finishes
- plans, drawings and specifications relevant to applying advanced decorative paint finishes
- processes for the calculation of material requirements relevant to applying advanced decorative paint finishes
- quality requirements relevant to applying advanced decorative paint finishes
- solid waste and paint sludge disposal techniques and relevant legislation, including Environmental Protection Authority (EPA) and local council regulations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3035 Prepare uncoated surfaces for painting

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

New unit.

Application

This unit of competency specifies the skills and knowledge required to prepare uncoated surfaces for the application of paint.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Review work instructions to prepare uncoated surfaces for painting.

- 1.2 Plan all work to meet relevant requirements of Australian Standards, work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
- 2 Prepare uncoated surfaces.
- 2.1 Determine and test condition and nature of substrate and surface material by conducting a moisture test.
 - 2.2 Select surface preparation method in accordance with environmental, finish and substrate requirements.
 - 2.3 Prepare surfaces by removing loose debris.
 - 2.4 Repair and fill surfaces to a smooth finish ready for painting.
- 3 Clean up.
- 3.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 3.2 Check and maintain tools and equipment and clean with appropriate solvents.
 - 3.3 Store tools, equipment and sealed unused materials to avoid spontaneous combustion.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3035 Prepare uncoated surfaces for painting

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

New unit.

Performance Evidence

- To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing a minimum of one square metre of each of the following uncoated surfaces for painting:
- an external timber surface
- an internal timber surface
- a plaster surface
- a metal surface
- a masonry surface
- a concrete floor
- exterior cement sheet cladding.

In preparing these surfaces the following equipment must be used:

- drop sheets
- duster brushes
- filling knives and blades
- hand sanders
- mechanical sanders
- water blasters
- nail punches
- putty knives
- scrapers
- wire brushes
- moisture meter.

All work must be performed to the standard required in the workplace and must meet the requirements of Australian Standards, work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safety requirements relevant to preparing new surfaces for painting
- environmental requirements relevant to preparing new surfaces for painting
- corrosion processes and techniques for the protection of metals relevant to preparing new surfaces for painting
- processes for preparing uncoated substrates for painting:
 - hard wood and soft wood surfaces
 - plaster surfaces
 - ferrous and non-ferrous metal surfaces
 - masonry surfaces
 - concrete floors
 - tilt panels
 - exterior cement sheet cladding
- techniques for removing substrate and surface contaminants, including:
 - dust
 - films of grease
 - mild efflorescence
 - saponification
 - mould
- procedures, products and techniques associated with preparation of new surfaces
- types, characteristics, uses and limitations of tools and equipment for preparing new surfaces for painting
- acid etching and grinding of concrete surfaces in preparation for painting
- moisture and pH testing and remedial actions
- quality requirements relevant to preparing new surfaces for painting.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPD3036 Work safely to encapsulate non-friable asbestos in the painting industry

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3031A Implement safe lead paint and asbestos work practices in the painting industry. Safe lead practice aspects removed and incorporated into separate unit. Safe treatment of asbestos material strengthened. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to safely encapsulate non-friable asbestos hazards.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Relevant state and territory regulatory authorities should be consulted to confirm requirements to encapsulate non-friable asbestos.

Pre-requisite Unit

CPCCWHS200 Apply WHS requirements, policies and procedures in the construction industry
1

Unit Sector

Painting and Decorating

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Review circumstances in which asbestos hazards may be encountered.
 - 1.2 Review work instructions and building information to implement safe asbestos work practices, and to determine the location of asbestos.
 - 1.3 Select and fit personal protective equipment (PPE) as required for each task.
 - 1.4 Plan all work to meet relevant requirements of work health and safety (WHS), Commonwealth and state or territory legislation, environmental plans and obligations, manufacturers' specifications, and workplace requirements.
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select tools and equipment, check for serviceability and report any faults.

- 2 Define and prepare work area.
 - 2.1 Identify sections within the work area where non-friable asbestos might be found.
 - 2.2 Establish and maintain a safe working area around substrates that might contain asbestos, and apply temporary control measures, barriers and signage to ensure substrates are not disturbed.
 - 2.3 Protect furnishings, other surfaces, surrounding ground areas, drinking vessels, water storage and foodstuffs and seal doors and windows.
 - 2.4 Arrange for testing to confirm the presence of asbestos.

- 3 Encapsulate asbestos.
 - 3.1 Assess and select methods, tools and equipment and PPE for the encapsulation of asbestos on existing surfaces in accordance with regulatory requirements.
 - 3.2 Assess suitability of work area for asbestos encapsulant coating.
 - 3.3 Apply a water based asbestos encapsulant coating to manufacturers' specifications.

- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal, materials handling and protection of the environment.
 - 4.2 Clear work area, reuse or recycle materials and place waste and unwanted materials into job waste bins or rubbish stockpile.
 - 4.3 Check and maintain tools and equipment and clean with appropriate solvents.
 - 4.4 Dispose of paint waste and water and solvents used in cleaning tools and equipment in an environmentally sustainable manner.
 - 4.5 Store tools, equipment and sealed unused materials to avoid spontaneous ignition.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCPD3031A Implement safe lead paint and asbestos work practices in the painting industry.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPD3036 Work safely to encapsulate non-friable asbestos in the painting industry

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCPD3031A Implement safe lead paint and asbestos work practices in the painting industry. Safe lead practice aspects removed and incorporated into separate unit. Safe treatment of asbestos material strengthened. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by using a paint system to encapsulate at least six square metres of non-friable asbestos.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- industry standards' recommendations for asbestos contamination
- current regulatory requirements and industry standards for encapsulation of asbestos
- responsibilities and limitations when working with asbestos, including when to report the presence of asbestos
- safety requirements relevant to implementing safe asbestos work practices in the painting industry
- personal protective equipment (PPE)
- sources and types of asbestos, including:
 - asbestos-containing materials (ACM)
 - loose-fill asbestos
 - naturally-occurring asbestos
 - friable and non-friable asbestos
- identifying the presence of asbestos
- environmental requirements relevant to implementing safe asbestos work practices in the painting industry
- building information on asbestos, including asbestos registers
- products for encapsulating asbestos, their uses and limitations

- encapsulation treatments for asbestos, their uses and limitations
- health risks associated with asbestos
- materials storage and environmentally friendly waste management in the painting industry
- processes for the calculation of material requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures.
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR3001 Operate personnel and materials hoists

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR3001A Operate personnel and materials hoists. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to safely and efficiently operate personnel and materials hoists for moving people and equipment to various heights in a multi-storey structure. It includes conducting pre-operational checks, operation, shutdown and post-operational checks of hoist equipment.

It applies to hoist operators who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to 1.1 Interpret work order and associated documentation and

- operate personnel and materials hoist.
- 1.2 clarify requirements with relevant persons.
- 1.3 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.
- 1.4 Select hoist, tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
- 1.4 Erect required safety signage and barricades and select and fit personal protective equipment (PPE).
- 2 Conduct and record personnel and materials hoist safety and equipment checks.
- 2.1 Confirm required signalling system with relevant persons.
- 2.2 Assess if weather conditions allow safe hoist operation.
- 2.3 Check hoist equipment and site for damage, structural weakness or interference.
- 2.4 Check mechanical, electrical and safety functions in accordance with manufacturer requirements.
- 2.5 Conduct a test run without a load through the full height of the hoist's travel, checking the operation and security of the mast and wall bolting.
- 2.6 Check and test braking system.
- 2.7 Check and challenge safety systems.
- 2.8 Record results of checks and tests in hoist logbook and report problems in accordance with regulatory and workplace requirements.
- 3 Operate personnel and materials hoist.
- 3.1 Conduct calculations and checks to ensure loads conform with safe load capacity of hoist.
- 3.2 Operate hoist safely in accordance with manufacturer and regulatory requirements.
- 3.3 Shut down hoist, render safe and make secure at end of work period, in accordance with manufacturer requirements.

- 3.4 Conduct and record post-operational checks.
- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCR13001A Operate personnel and materials hoists.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR13001 Operate personnel and materials hoists

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR13001A Operate personnel and materials hoists. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by operating a personnel and materials hoist to lift:

- two loads of different materials between floors in a multi-storey building
- two groups of personnel between floors in a multi-storey building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for operating personnel and materials hoists under applicable Commonwealth, state or territory work health and safety (WHS) legislation, Australian Standards and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- mathematical processes for calculating load mass to ensure conformity to safe load capacity of hoist
- safety and equipment checks for personnel and materials hoists
- signalling methods and communications
- processes for completing logbooks and site records
- requirements for cleaning up work area, maintaining and storing tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR13012 Perform basic rigging

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR13012A Perform basic rigging. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to erect or install permanent steel structures, dismantle structural steel, and move or locate plant and equipment using a range of basic rigging and dogging techniques. It includes load distribution.

It applies to workers who perform rigging duties for erection and installation of steel structures and for moving plant and equipment, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model Code of Practice: Construction Work, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to	1.1 Interpret work order and associated documentation and
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- perform basic rigging. clarify requirements with relevant persons.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.
 - 1.3 Select plant, tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
 - 1.4 Erect required safety signage and barricades and select and fit personal protective equipment (PPE).
- 2 Check basic rigging equipment.
- 2.1 Inspect lifting equipment in accordance with manufacturer and workplace requirements.
 - 2.2 Label, reject and dispose of any lifting equipment identified as inconsistent with manufacturer requirements, to prevent its use in any circumstance.
- 3 Connect basic rigging equipment.
- 3.1 Calculate and confirm load mass and load distribution.
 - 3.2 Secure whole or part loads to prevent uncontrolled movement.
 - 3.3 Attach slings, or parts of slings, to load, and position them to ensure safe movement and to protect load and associated equipment.
 - 3.4 Attach slings, or parts of slings, to hook while hoist wire is vertical.
 - 3.5 Attach tag lines to load as specified.
 - 3.6 Check load distribution.
 - 3.7 Perform test lifts to ensure safe and secure movement of load as specified.
- 4 Move and position loads using basic rigging equipment.
- 4.1 Determine load destination and prepare landing area to accept load.
 - 4.2 Assemble lifting or pulling device and erect where specified.

- 4.3 Move load safely to required destination and secure in position in accordance with work order and workplace requirements.
 - 4.4 Use standard communication signals to coordinate safe movement of load.
- 5 Remove basic rigging equipment.
 - 5.1 Dismantle lifting/moving equipment and packing, return to resting position and inspect for wear.
 - 5.2 Complete logbook and site records in accordance with workplace requirements.
- 6 Clean up.
 - 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCR13012A Perform basic rigging.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR13012 Perform basic rigging

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR13012A Perform basic rigging. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by performing basic rigging to complete the following three tasks:

- install and use a fall arrest system to sling, receive, place and brace a minimum 16 m² and a minimum of 5 m high module of structural steel in the correct sequence
- set up, place, install and brace perimeter safety screen and jump for two floors and a loading bay
- skid, locate and install heavy industrial equipment using winches and creeper skids for at least one tonne of plant.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for performing basic rigging under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - environmental and worksite safety plans
 - reporting problems
- mathematical processes for calculating load mass and distribution
- techniques for performing basic rigging:
 - assessing lifting tasks for time required for completion

- determining most efficient order for lifting tasks to coordinate with other site activities and to use resources efficiently
- documenting schedules
- modifying schedules
- communicating schedules and changes to schedules to crane crew and team members
- requirements for cleaning up work area, maintaining and storing tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR13013 Perform intermediate rigging

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to Unit Mapping.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCR13013A Perform intermediate rigging.
Unit mapping corrected. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to use intermediate rigging techniques to move and position loads including cranes and precast tilt-up slabs. It includes load distribution and calculation.

It applies to workers who perform rigging duties and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to perform intermediate rigging.	1.1 Interpret work instructions and associated documentation and clarify requirements with relevant persons. 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements. 1.3 Erect required safety signage and barricades and select and fit personal protective equipment (PPE) appropriate for work activities.
2 Select and check intermediate rigging equipment.	2.1 Select resources, materials and equipment in accordance with load charts, and inspect for compliance with work instructions. 2.2 Inspect lifting equipment in accordance with manufacturer and workplace requirements. 2.3 Label, reject and dispose of any lifting equipment identified as inconsistent with manufacturer requirements, to prevent its use in any circumstance. 2.4 Determine and select elevated work platforms and other means of mechanical access systems as specified. 2.5 Install fall arrest equipment with ground level installation. 2.6 Determine and select personnel cartage systems.
3 Connect intermediate rigging equipment.	3.1 Calculate and confirm load mass and load distribution. 3.2 Sling loads to ensure encapsulation of whole load. 3.3 Sling part loads to ensure full encapsulation of a part load. 3.4 Sling whole or part loads to protect loads and secure to prevent uncontrolled movement. 3.5 Attach load steorage lines and use to prevent unnecessary

load movement.

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|---|-----|--|
| 4 Move and position loads using intermediate rigging equipment. | 4.1 | Determine load lifting/shifting order to minimise necessity for double lifts. |
| | 4.2 | Connect lifting/shifting equipment to load. |
| | 4.3 | Perform test lift/shift to ensure lift suitability. |
| | 4.4 | Move load safely to required destination and secure in position in accordance with work instructions and workplace requirements. |
| | 4.5 | Use standard communication signals to coordinate safe movement of load. |
| 5 Remove intermediate rigging equipment. | 5.1 | Dismantle lifting/moving equipment and packing, return to resting position and inspect for wear. |
| | 5.2 | Complete logbook and site records in accordance with workplace requirements. |
| 6 Clean up. | 6.1 | Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. |
| | 6.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCR13013A Perform intermediate rigging.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR13013 Perform intermediate rigging

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to Unit Mapping.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCR13013A Perform intermediate rigging.
Unit mapping corrected. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria and perform intermediate rigging to move and position two loads involving:

- erecting and dismantling at least one lattice boom crane and fly using correct rigging and slinging techniques
- erecting a multi-point precast tilt-up slab of at least ten tonnes with correct rigging, slinging and de-rigging techniques, including determining lifting points, temporary supports and permanent fixing points from drawings.

Candidates must apply both single and dual lifting techniques.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for performing intermediate rigging under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements

- environmental and worksite safety plans
- reporting problems
- scope of work for performing intermediate rigging:
 - calculations:
 - load charts
 - fleet angles
 - diverter sheaves
 - lead loads
 - head loads
 - load angle factors
 - multiple fall
 - load share distribution
 - precast compliance charts
 - safe working loads
 - load slinging methods:
 - straight sling
 - adjustable sling
 - reeved sling
 - inclined sling
 - using lifting techniques, including single and dual lifts
- types, characteristics and limitations of tools and equipment required for performing intermediate rigging:
 - chain slings
 - flexible steel wire rope (FSWR) slings
 - natural or synthetic fibre slings
 - lifting devices:
 - shackles
 - turn buckles
 - jacks
 - chain winches
 - hand-operated creeper winches
 - chain blocks
 - pulley blocks
 - come-alongs
 - air winches
 - trolleys
 - eye bolts
 - rigging screws
 - lifting lugs
 - lifting clutches

- snatch blocks
- load shifting equipment:
 - skates
 - hydraulic jacks
 - winches
 - rails
- personnel cartage systems, including man boxes and elevated work platforms
- requirements for using tools, equipment and materials for performing advanced structural steel erection:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements
- signalling methods and communications
- processes for completing logbooks and site records
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR13014 Perform advanced structural steel erection

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR13014A Perform advanced structural steel erection. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to erect or install permanent steel structures, and to coordinate the slinging, stability, lifting, moving and placement of loads in conjunction with the crane operator. It includes selection of equipment, and load distribution and calculation.

It applies to workers who erect and install permanent steel structures, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to perform advanced structural steel erection.
 - 1.1 Interpret work order and associated documentation and clarify requirements with relevant persons.
 - 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.
 - 1.3 Select plant, tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
 - 1.4 Calculate materials quantities.
 - 1.5 Acquire materials for task and locate them safely ready for use.

- 2 Select and check equipment.
 - 2.1 Erect required safety signage and barricades and fit personal protective equipment (PPE).
 - 2.2 Select resources, materials, tools and equipment in accordance with load charts and inspect for compliance with work order.
 - 2.3 Inspect lifting equipment in accordance with manufacturer and workplace requirements.
 - 2.4 Label, reject and dispose of any lifting and load-shifting equipment identified as inconsistent with manufacturer requirements, to prevent its use in any circumstance.
 - 2.5 Select elevated work platforms and other means of mechanical access systems as specified.
 - 2.6 Install fall arrest equipment.
 - 2.7 Select personnel cartage systems.

- 3 Connect equipment.
 - 3.1 Calculate and confirm load mass and load distribution.
 - 3.2 Sling loads to protect load and prevent damage to slings.
 - 3.3 Secure whole or part loads to prevent uncontrolled movement.
 - 3.4 Attach slings, or parts of slings, to load and position them to ensure safe movement.

- 3.5 Attach slings, or parts of slings, to hook while hoist wire is vertical.
 - 3.6 Attach tag lines to load as specified.
 - 3.7 Perform test lifts to ensure safe and secure movement of load as specified.
- 4 Move and position loads.
- 4.1 Determine load destination and prepare landing area to accept load.
 - 4.2 Assemble lifting or pulling device and erect as specified.
 - 4.3 Move load safely to required destination and secure in position in accordance with work order and workplace requirements.
 - 4.4 Use standard communication signals to coordinate safe movement of load.
- 5 Remove equipment.
- 5.1 Dismantle lifting/moving equipment and packing, return to resting position and inspect for wear.
 - 5.2 Complete logbook and site records in accordance with workplace requirements.
- 6 Clean up.
- 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 6.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCRI3014A Perform advanced structural steel erection.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR13014 Perform advanced structural steel erection

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR13014A Perform advanced structural steel erection. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by performing advanced structural steel erection to complete the erection of one portal frame building, including trusses, bracing, purlins and girts, and incorporating at least one strongback lift and one bowstring lift.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for performing advanced steel erection under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- scope of work for performing advanced structural steel erection:
 - calculations:
 - load charts
 - fleet angles
 - diverter sheaves
 - lead loads
 - head loads
 - load angle factors

- multiple fall
- load share
- precast compliance charts
- safe working loads
- load slinging methods:
 - straight sling
 - adjustable sling
 - reeved sling
 - inclined sling
- using advanced lifting techniques, including strongbacks and bowstrings
- installing steel components:
 - columns
 - beams
 - bracing
 - rafters
 - purlins
 - girts
 - bridging and fly bracing
 - trusses
 - freestanding structures
 - portal frame buildings
- types, characteristics and limitations of tools, equipment and materials required for performing advanced structural steel erection:
 - chain slings
 - flexible steel wire rope (FSWR) slings
 - air winches
 - chain blocks
 - chain winches
 - come-alongs
 - drifts
 - eye bolts
 - hammers
 - hand operated creeper winches
 - jacks
 - podgers
 - pulley blocks
 - shackles
 - shifting spanners
 - sledge hammers
 - spirit levels and automatic levels

- tape measures
- trolleys
- turn buckles
- wedges
- wrenches
- requirements for use of tools, equipment and materials for performing advanced structural steel erection:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements
- signalling methods and communications
- processes for completing logbooks and site records
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR13015 Perform advanced tilt-up slab erection

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCR13015A Perform advanced tilt-up slab erection. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to conduct advanced tilt-up slab erection, and to coordinate the slinging, stability, lifting, moving, placement and storage of slabs in conjunction with the crane operator. It includes selection of equipment, and load distribution and calculation.

It applies to workers who perform advanced tilt-slab erection, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to perform advanced tilt-up slab erection.	<p>1.1 Interpret work instructions and associated documentation and clarify requirements with relevant persons.</p> <p>1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.</p> <p>1.3 Select plant, tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.</p> <p>1.4 Calculate materials quantities.</p> <p>1.5 Acquire materials for task and locate them safely ready for use.</p>
2 Select and check equipment.	<p>2.1 Erect required safety signage and barricades and fit personal protective equipment (PPE).</p> <p>2.2 Select resources, materials and equipment in accordance with load charts and inspect for compliance with work instructions.</p> <p>2.3 Inspect lifting equipment in accordance with manufacturer and workplace requirements.</p> <p>2.4 Label, reject and dispose of any lifting and load-shifting equipment identified as inconsistent with manufacturer requirements, to prevent its use in any circumstance.</p> <p>2.5 Select elevated work platforms and other means of mechanical access systems as specified.</p> <p>2.6 Install fall arrest equipment.</p> <p>2.7 Select personnel cartage systems.</p>
3 Erect tilt-up slabs.	<p>3.1 Review lift plan and determine job sequencing schedule and documentation, and communicate this information to relevant persons to ensure coordination.</p>

- 3.2 Calculate and confirm load mass and load distribution.
 - 3.3 Determine erection sequence for tilt-up slab components.
 - 3.4 Assemble and erect lifting or pulling devices for movement of loads.
 - 3.5 Sling load.
 - 3.6 Shift load in accordance with job safety and environmental analysis (JSEA) and safe work method statement (SWMS).
 - 3.7 Maintain stability of load during lifting, tilting and transportation.
 - 3.8 Direct load to landing position in accordance with engineering specifications.
- 4 Position and anchor tilt-up slabs.
 - 4.1 Position tilt slab components in accordance with engineering specifications.
 - 4.2 Achieve shape of structure by checking dimensions and applying temporary bracing.
 - 4.3 Anchor tilt slab components in accordance with manufacturer requirements and engineering specifications.
- 5 Remove rigging equipment.
 - 5.1 Dismantle lifting/shifting equipment and packing, return to resting position and inspect for wear.
 - 5.2 Complete logbook and site records in accordance with workplace requirements.
- 6 Clean up.
 - 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCRI3015A Perform advanced tilt-up slab erection.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR13015 Perform advanced tilt-up slab erection

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR13015A Perform advanced tilt-up slab erection. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by performing advanced tilt-up slab erection to erect:

- one multi-point precast tilt-up slab of at least 10 tonnes
- one cast *in situ* tilt-up slab of at least 10 tonnes.

Each task must be performed using correct rigging, slinging and de-rigging techniques, including:

- determining lifting points, temporary supports and permanent fixing points from panel erection drawings by following the lift plan
- positioning and bracing the slab
- safe unloading from the truck
- rotating panel from one plane to another
- incorporating at least two bracing techniques.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for performing advanced tilt-up slab erection under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades

- personal protective equipment (PPE)
- working at heights requirements
- environmental and worksite safety plans
- reporting problems
- scope of work for performing advanced tilt-up slab erection:
 - calculations:
 - load charts
 - fleet angles
 - diverter sheaves
 - lead loads
 - head loads
 - load angle factors
 - multiple fall
 - load share
 - precast compliance charts
 - safe working loads
 - load slinging methods:
 - straight sling
 - adjustable sling
 - reeved sling
 - inclined sling
 - advanced lifting techniques:
 - rotation (turning panel from one plane to another)
 - standard lift from a truck
 - lift from flat on ground
 - tilt-up slabs:
 - prefabricated and cast *in situ* tilt-up slabs
 - slabs with cast-in lifting and/or bracing inserts
 - bracing of tilt-up slabs:
 - lateral bracing
 - end bracing
 - main bracing
 - knee bracing
 - deadman bracing
- types, characteristics and limitations of tools, equipment and materials required for performing advanced tilt-up slab erection:
 - chain slings
 - flexible steel wire rope (FSWR) slings
 - air winches
 - chain blocks

- chain winches
- come-alongs
- drifts
- eye bolts
- hammers
- hand operated creeper winches
- jacks
- podgers
- pulley blocks
- shackles
- shifting spanners
- sledge hammers
- spanners
- spirit levels and automatic levels
- tape measures
- trolleys
- turn buckles
- wedges
- wrenches
- requirements for use of tools, equipment and materials for performing advanced tilt-up slab erection:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements
- signalling methods and communications
- processes for completing logbooks and site records
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment used to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR13016 Perform advanced tower crane erection

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR13016A Perform advanced tower crane erection. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to conduct advanced tower crane erection. It includes coordinating the slinging, stability, lifting, moving and placement of tower cranes and tower crane sections in conjunction with the crane operator, and selecting equipment and load distribution and calculation.

It applies to workers who erect tower cranes and coordinate all aspects of lifting, moving and placing sections, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to perform advanced tower crane erection.
 - 1.1 Interpret work order and associated documentation and clarify requirements with relevant persons.
 - 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.
 - 1.3 Plan and implement required risk controls.
 - 1.4 Review crane erection, rigging and dismantling plan to ensure conformity with manufacturer and engineering specifications.
 - 1.5 Check foundation that will support crane base is structurally suitable and conforms with engineering standards.
 - 1.6 Conduct required calculations to determine load mass and distribution.

- 2 Select and check equipment.
 - 2.1 Erect required safety signage and barricades and fit personal protective equipment (PPE).
 - 2.2 Select resources, materials, tools and equipment in accordance with load charts and inspect for compliance with work order.
 - 2.3 Inspect lifting equipment in accordance with manufacturer and workplace requirements.
 - 2.4 Label, reject and dispose of any lifting and load-shifting equipment identified as inconsistent with manufacturer requirements, to prevent its use in any circumstance.
 - 2.5 Select elevated work platforms and other means of mechanical access systems as specified.
 - 2.6 Install fall arrest equipment.
 - 2.7 Select personnel cartage systems.
 - 2.8 Calculate and confirm load mass and load distribution.

- 3 Assemble and erect crane.
 - 3.1 Locate base of crane and position in accordance with manufacturer and engineering specifications.

- 3.2 Erect bottom tower and climbing frame/transition piece, and install, level and plumb in accordance with manufacturer and engineering specifications.
 - 3.3 Install and secure tower braces or guys to support tower crane.
 - 3.4 Assemble, erect and install mast, turntable, machine deck and power pack of crane in accordance with manufacturer requirements.
 - 3.5 Assemble and erect main jib and counter jib in accordance with manufacturer requirements.
 - 3.6 Lift counterweights into cradles and secure in accordance with manufacturer requirements.
 - 3.7 Install wire ropes, hook and block reeving in accordance with manufacturer requirements.
- 4 Climb (raise/lower) tower crane.
 - 4.1 Remove drop ladder, and place and secure monorail.
 - 4.2 Secure crane and place at balance point ready for climbing.
 - 4.3 Remove tower bolts to transition piece, fit drifts and check rollers.
 - 4.4 Move tower section into place in accordance with manufacturer requirements.
 - 4.5 Reconnect crane with bolts and conduct a visual check of all components and connectors.
- 5 Dismantle tower crane.
 - 5.1 Disconnect electrical and hydraulic lines safely.
 - 5.2 Dismantle power pack, counterweights, climbing frame and crane deck, and lower safely to the ground.
- 6 Clean up.
 - 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 6.2 Clean, check, maintain and store tools and equipment in

accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCR13016A Perform advanced tower crane erection.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR13016 Perform advanced tower crane erection

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR13016A Perform advanced tower crane erection. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by performing advanced tower crane erection to:

- fully erect and rig one hammerhead tower crane, including a jib
- fully erect and rig one luffing boom tower crane, including a jib
- complete the raising of one hammerhead tower crane by installing at least two extra sections
- complete the raising of one luffing boom tower crane by installing at least two extra sections.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for performing advanced tower crane erection under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- scope of work for performing advanced tower crane erection:
 - calculations:
 - load charts
 - fleet angles

- diverter sheaves
- lead loads
- head loads
- load angle factors
- multiple fall
- load share
- precast compliance charts
- safe working loads
- load slinging methods:
 - straight sling
 - adjustable sling
 - reeved sling
 - inclined sling
- cranes used for erecting tower cranes:
 - fixed cranes
 - tower cranes
 - hydraulic mobile cranes
 - lattice boom mobile cranes
 - slewing cranes
- tower cranes:
 - hammerhead tower cranes
 - luffing boom tower cranes
 - self-erecting tower cranes
- tower crane components:
 - crane bases
 - bottom towers
 - tower sections
 - climbing frame/transition pieces
 - tower braces
 - guys
 - masts
 - turntables
 - machine decks
 - power packs
 - main jibs
 - counter jibs
 - counterweights
 - wire ropes
 - hook and block reeving
 - connecting bolts

- types, characteristics and limitations of tools, equipment and materials required for performing advanced tower crane erection:
 - chain slings
 - flexible steel wire rope (FSWR) slings
 - natural or synthetic fibre slings
 - air winches
 - chain blocks
 - chain winches
 - come-alongs
 - drifts
 - eye bolts
 - hammers
 - hand operated creeper winches
 - jacks
 - plumbing/levelling equipment
 - pneumatic wrenches
 - podgers
 - pulley blocks
 - shackles
 - shifting spanners
 - sledge hammers
 - spanners
 - spirit levels and automatic levels
 - tape measures
 - torque multipliers
 - trolleys
 - turn buckles
 - wedges
 - wrenches
- requirements for use of tools, equipment and materials for performing advanced tower crane erection:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements
- signalling methods and communications
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR2001 Handle roof tiling materials

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to Elements and Performance Evidence 4.1 and 4.2.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR2001A Handle roof tiling materials.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely handle and store roof tiling materials.

It includes the preparation, handling, sorting, stacking, distribution and disposal of tiling materials, following environmental principles, in the application of the tiles to a roof.

The unit is suitable for those with basic skills and knowledge undertaking tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Roof tiling

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare to handle roof tiling materials.	<p>1.1 Read and interpret work instructions and plan sequence of work.</p> <p>1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.</p> <p>1.3 Select and use personal protective equipment (PPE) for each stage of the task.</p> <p>1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.</p> <p>1.5 Select tools and equipment, check for serviceability and report any faults.</p>
2 Receive, sort and distribute roof tiling materials.	<p>2.1 Check roof tiling materials for compliance to material schedule, plans, quality requirements and specifications.</p> <p>2.2 Identify handling characteristics of roof tiling materials and apply safe and effective handling techniques.</p> <p>2.3 Check that fall safety devices have been installed correctly.</p> <p>2.4 Handle, assemble and erect elevator at job location.</p> <p>2.5 Sort roof tiling materials by material types and sizes, and stack for ease of identification and retrieval for task sequence.</p> <p>2.6 Use safe manual handling techniques to transfer and load roof tiling materials onto roof, support and distribute evenly.</p>
3 Handle and remove surplus material from roof.	<p>3.1 Handle surplus materials safely and effectively.</p> <p>3.2 Identify hazardous material for separate handling by authorised personnel.</p> <p>3.3 Load and transfer surplus roof tiling materials from roof to ground.</p>

- 3.4 Clear roof, guttering and downpipes of waste and surplus material.
- 4 Clean up.
 - 4.1 Clear work area, store or dispose of materials, and reuse or recycle in compliance with environmental requirements, legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCR2001A Handle roof tiling materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR2001 Handle roof tiling materials

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to Elements and Performance Evidence 4.1 and 4.2.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR2001A Handle roof tiling materials.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

- transferring sufficient materials to sark, batten and tile a minimum 45 square metres of roof from ground level to the roof working area
- relocating waste materials from the roof working area to ground level
- disposing of waste material.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for handling roof tiling materials
- quality policies and standards for handling roof tiling materials
- safety requirements for handling roof tiling materials, including:
 - safety data sheets
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- environmental requirements for handling roof tiling materials
- handling characteristics of roof tiling materials:

- adhesives
 - concrete and terracotta tiles
 - fastenings and other mechanical fixings
 - flashings
 - bedding
 - sarking materials
 - timber and metal battens
 - flexible pointing material
 - lead
 - shingles
 - slate
- types and uses of materials storage and environmentally friendly waste management
 - types and uses of plans, drawings and specifications for handling roof tiling materials
 - types and uses of tools and equipment for handling roof tiling materials
 - roof construction systems, structures and tiling loading considerations
 - roof tiling materials handling and disposal techniques and processes.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR2002 Use roof tiling tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR2002A Use roof tiling tools and equipment. Updated to meet the Standards for Training Packages.

Application

This unit of competency specifies the skills and knowledge required to safely and effectively use hand and power tools and equipment for roof tiling.

The unit is suitable for those with basic skills and knowledge working under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Roof tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare to use roof tiling tools and equipment. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
- 2 Select and check tools and equipment.
- 2.1 Identify functions and limitations of tools and equipment used in roof tiling.
 - 2.2 Select tools and equipment for the task based on their functions and limitations, check for serviceability and report any faults.
 - 2.3 Check that power tools and electrical leads are tested and tagged.
 - 2.4 Conduct pre-operational checks on tools and equipment to manufacturers' specifications.
 - 2.5 Examine power tools and equipment to ensure guards are fitted and working, blades and attachments are secured, and switches are operational.
- 3 Use tools and equipment.
- 3.1 Connect power and/or compressed air supply to work area.
 - 3.2 Perform start up and shut down procedures in accordance with manufacturers' specifications.
 - 3.3 Use tools safely and effectively according to manufacturers' specifications.
 - 3.4 Switch-off and locate tools safely when not in immediate use.
 - 3.5 Inspect, maintain and tag tools and equipment and report any faults.
 - 3.6 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCRT2002A Use roof tiling tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR2002 Use roof tiling tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR2002A Use roof tiling tools and equipment. Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by selecting, checking and using tools and equipment to tile a minimum 25 square metres of roof, including at least 1.5 metres each of top ridge, hip, valley and gable.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for using tiling tools and equipment
- workplace quality policies and standards for using tiling tools and equipment
- safety requirements for using tiling tools and equipment, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- measuring and marking using tiling tools and equipment
- purpose and safe use of tiling tools and equipment:
 - bedding frames
 - blowers
 - chisels
 - concrete mixers
 - elevators
 - embossing mallets
 - fall safety devices

- gutter protectors
- hammers
- hand/bush saws
- ladders
- measuring tapes and rules
- nail guns
- pincers
- power drills, grinders, saws
- shovels
- squares
- string and chalk lines
- tile cutters
- trowels
- breaks or cutting irons
- guillotines
- small compressors
- small petrol or diesel engines.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR3001 Tile regular roofs

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and equivalent to CPCCR3001A Tile regular roofs. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install roof tiles to a range of regular roof structure types.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Roof tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---|-----|---|
| 1 | Plan and prepare to tile regular roofs. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | | 1.2 | Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian |

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely, and prepare and position ready for use.
- 2 Prepare roof face.
- 2.1 Check that fall safety devices have been installed correctly.
 - 2.2 Handle, assemble and erect elevator at job location.
 - 2.3 Check roof surface and structure for stability, and for safe access to roof for tile installation.
 - 2.4 Set out roof surface, and sark.
- 3 Cut and fix battens.
- 3.1 Measure and cut battens.
 - 3.2 Fix battens using fasteners at specified centres.
 - 3.3 Check completed battens for alignment and fixing.
- 4 Install tiles.
- 4.1 Load, support and evenly distribute tiles on roof.
 - 4.2 Spread out, secure and install roof tiles.
 - 4.3 Bed roof tiles using specified bedding mix and maintaining alignment.
 - 4.4 Point roof tiles to a flush, smooth finish to job specifications.

- 5 Clean up.
 - 5.1 Clear roof, guttering and downpipes of waste and surplus material.
 - 5.2 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 5.3 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCR3001A Tile regular roofs.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR3001 Tile regular roofs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR3001A Tile regular roofs. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by tiling roof construction systems and structures, including:

- gable
- hip
- hip and valley
- skillion
- Dutch gable valley
- Dutch gable hip
- gusset valley
- broken hip (dog leg)
- butt ridging
- dog leg valley.

These roof construction systems and structures must include those with:

- metal battens and metal frame
- metal battens and timber frame
- timber battens and metal frame
- timber battens and timber frame.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for tiling regular roofs
- workplace quality policies and standards for tiling regular roofs
- safety requirements for tiling regular roofs, including:

- job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
- safety data sheets (SDS)
- personal protective equipment (PPE)
- environmental requirements for tiling regular roofs
- characteristics and applications of roof tiling materials:
 - adhesives
 - concrete and terracotta tiles
 - fastenings and other mechanical fixings
 - flashings
 - bedding
 - sarking
 - timber and/or metal battens
 - flexible pointing material
- types and uses of materials storage and environmentally friendly waste management
- measuring and marking for tiling regular roofs
- types and uses of plans, drawings and specifications for tiling regular roofs
- types and uses of tools and equipment for tiling regular roofs
- processes for the calculation of materials requirements for tiling regular roofs
- types and uses of roof construction systems and structures and tiling considerations for regular roofs:
 - gable
 - hip
 - hip and valley
 - pitched roofs $\leq 27^\circ$
 - skillion
 - Dutch gable
 - Dutch gable hip
 - downpipe spreaders
 - long rafter sarking
 - Dutch gable valley
 - gusset valley
 - broken hip (dog leg)
 - butt ridging
 - dog leg valley
- roof tiling techniques and processes
- common defects and solutions in roof tiling.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR3002 Tile irregular roofs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR3002A Tile irregular roofs. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install roof tiles to roofs incorporating irregular shapes, unequal pitches and dormer windows with tiled surrounds.

It includes the preparation, setting out, installing and fixing of tiles to a roof.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Roof tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1	Plan and prepare to tile irregular roofs.	1.1	Read and interpret work instructions and plan sequence of work.
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- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare roof face.
- 2.1 Check that fall safety devices have been installed correctly.
 - 2.2 Handle, assemble and erect elevator at job location.
 - 2.3 Check roof surface and structure for stability, and for safe access to roof for tile installation.
 - 2.4 Set out roof surface, and sark.
- 3 Install tiles.
- 3.1 Load, support and evenly distribute tiles on roof.
 - 3.2 Spread out, secure and install roof tiles.
 - 3.3 Bed hip and ridge tiles using specified bedding mix, maintaining alignment.
 - 3.4 Point hips, ridges and gables in flexible pointing to a smooth and even finish.
- 4 Tile roof openings and lay back surfaces and/or facades.
- 4.1 Check opening surrounds for soakers and flashings and prepare for tiles.
 - 4.2 Tile surrounds and flashings.
 - 4.3 Distribute and secure tiles to steep and vertical surfaces

to Australian Standards.

- 5 Clean up.
 - 5.1 Clear roof, guttering and downpipes of waste and surplus material.
 - 5.2 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 5.3 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCR3002A Tile irregular roofs.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCRT3002 Tile irregular roofs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCRT3002A Tile irregular roofs. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

tiling roof construction systems and structures, including:

- roofs constructed to irregular shaped plans where corners are not right-angled
- bastard valley
- eight hip hex
- splayed gable
- butt ridging
- mitred apex
- steep hip and valley roof (minimum 35° pitch)
- soldier course valley
- turrets
- unequal pitch surfaces
- Cape Cod
- mansard
- bellcast
- pyramid or four way apex
- openings in irregular roofs, including:
 - chimneys
 - roof ventilators
 - cupolas
 - dormer windows
 - two storey inserts
 - skylights
 - pipes
 - flues.

These roof construction systems and structures must include those with:

- metal battens and metal frame
- metal battens and timber frame
- timber battens and metal frame
- timber battens and timber frame.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for tiling irregular roofs
- workplace quality policies and standards for tiling irregular roofs
- safety requirements for tiling irregular roofs, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for tiling irregular roofs
- characteristics and applications of roof tiling materials:
 - adhesives
 - concrete and terracotta tiles
 - fastenings and other mechanical fixings
 - flashings
 - bedding
 - sarking materials
 - timber and metal frames and battens
 - flexible pointing material
 - shingles
 - slate
 - storm seal/prestite
 - bed and point valleys
- types and uses of materials storage and environmentally friendly waste management
- measuring and marking for tiling irregular roofs
- types and uses of plans, drawings and specifications for tiling irregular roofs
- types and uses of tools and equipment for tiling irregular roofs
- processes for the calculation of materials requirements for tiling irregular roofs
- types and uses of roof construction systems and structures, and tiling considerations for irregular roofs, including:
 - roofs constructed to irregular shaped plans where corners are not right-angled

- bastard valley
- eight hip hex
- splayed gable
- butt ridging
- mitred apex
- steep hip and valley roof (minimum 35° pitch)
- soldier course valley
- turrets
- unequal pitch surfaces
- Cape Cod
- mansard
- bellcast
- pyramid or four way apex
- openings in irregular roofs:
 - chimneys
 - roof ventilators
 - cupolas
 - dormer windows
 - two storey inserts
 - skylights
 - pipes
 - flues
- roof tiling techniques and processes.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR3003 Repair and replace valleys, valley irons and flashings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR3003B Repair and replace valleys, valley irons and flashings. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to repair and replace valley roof sections and flashings on different types and styles of tiled roof structures.

It includes the preparation, set out, repair, replacement and pointing of tiles to valley sections of roof structures.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Roof tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to repair and replace valleys, valley irons and flashings.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.

- 2 Prepare valley section for repair.
 - 2.1 Locate damaged area from plans and specifications.
 - 2.2 Check that fall safety devices have been installed correctly.
 - 2.3 Identify tiles to be repaired or replaced from a removed sample.
 - 2.4 Remove damaged tiles with minimum disturbance to remaining roof tiles.
 - 2.5 Relocate existing tiles to blend aesthetically with new tiles.
 - 2.6 Remove pointing or bedding over valley irons, flashings and affected roof tiles without damage.
 - 2.7 Clean damaged area and remove waste.
 - 2.8 Check roof structure valleys and flashing installations for soundness and adequacy.

- 3 Repair valley sections.
 - 3.1 Repair/replace damaged structural components of valley section of roof.

- 3.2 Replace/install roof tie down fixings to roof structure.
 - 3.3 Fabricate and install valley flashings.
- 4 Install roof tiles to valley and flashing sections.
 - 4.1 Inspect each replacement tile for match to original tiles.
 - 4.2 Mix bedding to Australian Standards.
 - 4.3 Lay tiles to existing design, gauge, alignment and bond specifications.
- 5 Apply bedding and pointing material.
 - 5.1 Apply bedding and pointing/storm seal material to Australian Standards.
 - 5.2 Point joints/collars to match finish to existing surrounds.
- 6 Clean up.
 - 6.1 Remove loose material from roof tile surface, clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCR3003B Repair and replace valleys, valley irons and flashings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR3003 Repair and replace valleys, valley irons and flashings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR3003B Repair and replace valleys, valley irons and flashings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by removing, replacing and/or installing valley irons and flashings to include:

- side flashing
- step flashing
- soaker flashings
- vent pipe flashing
- valley iron and valley board
- valley flashing (e.g. Dutch gable flashing)
- Dutch gable hip flashing
- skylight flashing
- chimney flashing
- brick pillar flashing
- front apron flashing
- butt ridge flashing
- secret hip flashing.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for repairing and replacing valleys, valley irons and flashings
- workplace quality policies and standards for repairing and replacing valleys, valley irons and flashings

- safety requirements or repairing and replacing valleys, valley irons and flashings, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- techniques and procedures for repairing tiled roof valleys, valley irons and flashings
- environmental requirements for repairing and replacing valleys, valley irons and flashings
- characteristics and applications of materials used in repairing tiled roof valleys, valley irons and flashings
- processes for installation of roof battens, sarking and flashing
- types and uses of materials storage and environmentally friendly waste management
- measuring and marking for repairing and replacing valleys, valley irons and flashings
- types and uses of plans, drawings and specifications for repairing and replacing valleys, valley irons and flashings
- types and uses of tools and equipment for repairing and replacing valleys, valley irons and flashings
- types and uses of flashing:
 - side flashing
 - step flashing
 - soaker flashings
 - vent pipe flashing
 - valley flashing (e.g. Dutch gable flashing)
 - Dutch gable hip flashing
 - skylight flashing
 - chimney flashing
 - brick pillar flashing
 - front apron flashing
 - butt ridge flashing
 - secret hip flashing
- types and uses of valley iron and valley board
- processes for the calculation of material requirements for repairing and replacing valleys, valley irons and flashings
- roof construction systems and structures and tiling considerations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR3004 Repair and renovate tile roofs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR3004B Repair and renovate tile roofs. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to repair and renovate roof tiles on different roof structures.

It includes preparation, and replacement and fixing of tiles to the roof.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Roof tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---|-----|---|
| 1 | Plan and prepare to repair and renovate | 1.1 | Read and interpret work instructions and plan sequence of work. |
|---|---|-----|---|

- roofs.
- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely, and prepare and position ready for use.
- 2 Prepare roof area.
- 2.1 Locate damaged area from plans and specifications.
 - 2.2 Check that fall safety devices have been installed correctly.
 - 2.3 Remove damaged tiles with minimum disturbance to remaining roof tiles.
 - 2.4 Remove pointing or bedding without damage to roof tiles.
 - 2.5 Clean damaged area and remove loose waste.
 - 2.6 Check roof battens, sarking, boarding and flashing installations for soundness and adequacy.
- 3 Replace roof tiles.
- 3.1 Inspect each replacement tile for match to existing tiles and relocate existing tiles to allow for aesthetic blending.
 - 3.2 Mix bedding to Australian Standards.
 - 3.3 Lay tiles to existing design, gauge, alignment and bond specifications.
 - 3.4 Strike bedding joints to match existing colour.

- | | | | |
|---|----------------------------|-----|--|
| 4 | Replace pointing material. | 4.1 | Mix pointing material to Australian Standards. |
| | | 4.2 | Apply pointing material to ridge tile joints. |
| | | 4.3 | Point joints/collars to match finish to existing surrounds. |
| | | | |
| 5 | Clean up. | 5.1 | Remove loose material from roof tile surface, clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice. |
| | | 5.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCR3004B Repair and renovate tile roofs.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR3004 Repair and renovate tile roofs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCR3004B Repair and renovate tile roofs.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by repairing and renovating a minimum one square metre of tiles, including damaged hip cuts, re-bedding and pointing, and replacing:

- damaged battens
- damaged sarking
- flashing and or sarking under downpipe spreader.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for repairing and renovating tile roofs
- workplace quality policies and standards for repairing and renovating tile roofs
- safety requirements for repairing and renovating tile roofs, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for repairing and renovating tile roofs
- characteristics and applications of roof tiling materials
- installation of roof battens, sarking and flashing
- leak detection and causes of leaks in roofs
- types and uses of materials storage and environmentally friendly waste management

- measuring and marking for repairing and renovating tile roofs
- types and uses of plans, drawings and specifications for repairing and renovating tile roofs
- types and uses of tools and equipment for repairing and renovating tile roofs
- processes for the calculation of material requirements for repairing and renovating tile roofs
- types and uses of roof construction systems and structures and tiling considerations
- roof tiling techniques and procedures and the process of repairing/renovating tiled roofs.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR3005 Slate a roof

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence and Knowledge Evidence formatted for clarity. Changes to Performance Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCR3005B Slate a roof. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install slate on a conventional hip and valley roof.

It includes preparing, setting out and installing slate to a roof and replacing damaged slates.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Roof tiling

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare to slate a roof.	<p>1.1 Read and interpret work instructions and plan sequence of work.</p> <p>1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.</p> <p>1.3 Select and use personal protective equipment (PPE) for each stage of the task.</p> <p>1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.</p> <p>1.5 Select tools and equipment, check for serviceability and report any faults.</p> <p>1.6 Select materials required for task, calculate quantities, handle safely, and prepare and position ready for use.</p>
2 Prepare roof face.	<p>2.1 Check that fall safety devices have been installed correctly.</p> <p>2.2 Handle, assemble and erect elevator at job location.</p> <p>2.3 Set out roof surface, board and/or batten, sark and strike.</p> <p>2.4 Check roof surface and structure for stability, and for safe access to roof.</p>
3 Prepare slate.	<p>3.1 Load onto, support and evenly distribute slate on roof.</p> <p>3.2 Grade, mark and hole slate to alignment requirements.</p>
4 Lay and secure slate.	<p>4.1 Lay and secure slate to designed layout of gauge, bond and line.</p> <p>4.2 Finish ridges and hips in accordance with placement of slate.</p> <p>4.3 Install, measure, prepare, fit and fix hip covering.</p>

- | | | | |
|---|-----------------|-----|--|
| 5 | Replace slates. | 5.1 | Remove damaged slate avoiding damage to surrounding slates. |
| | | 5.2 | Prepare and fix replacement slate to match surrounds. |
| 6 | Clean up. | 6.1 | Clear roof and guttering, and remove waste and surplus material |
| | | 6.2 | Clear work area and dispose of, reuse or recycle materials in accordance with legislation, regulations, codes of practice and job specification. |
| | | 6.3 | Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' specifications. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCR3005B Slate a roof.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCRT3005 Slate a roof

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence and Knowledge Evidence formatted for clarity. Changes to Performance Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCRT3005B Slate a roof. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

- slating a roof frame, incorporating:
 - setting out, boarding/battening, sarking and striking
 - a 1.5 metre mitred hip
 - a 1.5 metre valley
 - a 1.5 metre gable with flashings to a wall or abutment
 - a 1.5 metre top ridge
 - use of hook fixing systems
 - bedding and pointing
- removing and replacing a minimum of three damaged slates.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for slating a roof
- workplace quality policies and standards for slating a roof
- safety requirements for slating a roof, including:

- job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
- safety data sheets (SDS)
- personal protective equipment (PPE)
- environmental requirements for slating a roof
- characteristics and applications of slate and slating materials:
 - hip finishes:
 - mitred
 - lead
 - ridge
 - metal
 - preparation materials/processes:
 - battened and felted (sarked)
 - boarded and felted (sarked)
 - boarded
 - felted (sarked)
 - battened and boarded, felted (sarked)
 - counter-battened
 - battened
- installation of roof battens, sarking and flashing
- processes for using hook fixing systems when changing slate
- incorporating patterns to laying of slate
- types and uses of materials storage and environmentally friendly waste management
- measuring and marking for slating a roof
- types and uses of plans, drawings and specifications for slating a roof
- processes for setting out:
 - head lap
 - side lap
 - angle of creep
- types and uses of tools and equipment for slating a roof
- processes for the calculation of material requirements for slating a roof
- types and uses and slating considerations of roof construction systems and structures
- slating techniques and procedures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCR3006 Fix shingles to roofs and facades

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCR3006B Fix shingles to roofs and facades.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to fix timber shingles or shakes to provide a waterproof covering to roofs, walls and facades.

It includes preparation, installation and finishing of the covered surface.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Roof tiling

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare to fix shingles to roofs and facades.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely, and prepare and position ready for use.
 - 2 Prepare roof face.
 - 2.1 Check that fall safety devices have been installed correctly.
 - 2.2 Handle, assemble and erect elevator at job location.
 - 2.3 Set out roof surface, board/batten, sark and strike.
 - 2.4 Check roof surface and structure for stability and for safe access to roof.
 - 3 Install shingles/shakes.
 - 3.1 Load, support and distribute shingles/shakes evenly on roof.
 - 3.2 Lay sarking below initial course of shingles/shakes.
 - 3.3 Fix shingles/shakes in line, with spacing and guttering overhang.
 - 3.4 Lay subsequent courses with sarking and shingles.
 - 3.5 Maintain staggered joints and bonds with overlapping shingles/shakes.

- 3.6 Split shingles/shakes and cut to form junctions with walls or roof surfaces.
 - 3.7 Finish valleys.
 - 3.8 Finish gable ends to line and overhang.
- 4 Finish hips and ridges.
- 4.1 Select same-size shingles/shakes for hips and ridges.
 - 4.2 Bevel-cut edges of shingles/shakes to provide butt joints in capping sections.
 - 4.3 Cover, fix and finish hips and ridges to line.
- 5 Clad walls and facades.
- 5.1 Select method of finishing shingles/shakes on wall or facade.
 - 5.2 Sheet and fix sheathed surfaces to framework.
 - 5.3 Set out wall or facade spacing for battens and exposure of shingles/shakes.
 - 5.4 Fit sarking and shingles/shakes.
 - 5.5 Construct junctions at corners to finishes.
 - 5.6 Finish flashings.
- 6 Clean up.
- 6.1 Clear work area and dispose of materials, and reuse or recycle materials in accordance with legislation, regulations, codes of practice.
 - 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCR3006B Fix shingles to roofs and facades.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR3006 Fix shingles to roofs and facades

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
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- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCR3006B Fix shingles to roofs and facades.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by fixing shingles and/or shakes to:

- a roof frame, incorporating:
 - setting out, boarding and/or battening, sarking and striking
 - a 1.5 metre hip
 - a 1.5 metre valley
 - a 1.5 metre gable
 - a 1.5 metre top ridge
- an external wall of minimum 1 square metre, incorporating:
 - an internal corner with flashing
 - sarking, battening and finishing.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for fixing shingles to roofs and facades
- workplace quality policies and standards for fixing shingles to roofs and facades
- safety requirements for fixing shingles to roofs and facades, including:

- job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
- safety data sheets (SDS)
- personal protective equipment (PPE)
- environmental requirements for fixing shingles to roofs and facades
- characteristics and applications of shingle/shake materials:
 - shingles/shakes:
 - terracotta
 - timber
 - timber shingles/shakes:
 - straight split
 - taper split
 - hand split
 - re-sawn
- processes for installation of roof battens, sarking and flashing:
 - preparation for shingles/shakes on roof surfaces:
 - battened/boarded and sarked
 - boarded, counter battened and sarked
- types and uses of materials storage and environmentally friendly waste management
- measuring and marking for fixing shingles to roofs and facades
- types and uses of plans, drawings and specifications for fixing shingles to roofs and facades
- types and uses of tools for fixing shingles to roofs and facades
- processes for the calculation of material requirements for fixing shingles to roofs and facades
- quality requirements for fixing shingles to roofs and facades
- types and uses of roof and facade construction systems and structures and shingling considerations:
 - hip finishes:
 - mitred
 - lead
 - ridge
 - metal
 - bonnet
 - roof protrusions:
 - chimneys
 - dormer windows
 - two storey insert
 - skylights
 - pipes and flues
 - roof ventilators

- cupolas
 - joining at wall corners:
 - butted against boards
 - laced with flashing behind for internal
 - butted against timber stop for both external and internal
- roof and facade shingling techniques and procedures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSC2001 Handle and position scaffolding tools, equipment and components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSC2001A Safely handle and use scaffolding tools and equipment. Updated to meet the Standards for Training Packages.

Application

This unit specifies the skills and knowledge required to handle and locate scaffolding tools, equipment and components. It includes selecting, moving, locating, positioning and storing scaffolding tools, equipment and components.

It applies to those who work under the direction of more experienced workers to support dogging activities.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1	Plan and prepare to	1.1	Read work order and associated documentation and
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- handle, move and locate scaffolding tools, equipment and components.
- 1.2 clarify work tasks with relevant persons.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
- 1.3 Select tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
- 1.4 Select and fit personal protective equipment (PPE) appropriate for work activities.
- 2 Handle, move, sort and stack scaffolding tools, equipment and components.
- 2.1 Move scaffolding tools, equipment and components manually using safe manual handling techniques.
- 2.2 Stack or band scaffolding tools, equipment and components for mechanical handling in accordance with work order.
- 2.3 Load, unload, move or locate scaffolding tools, equipment and components at specified location, assist mechanical handling equipment operator and ensure safe handling.
- 2.4 Sort scaffolding tools, equipment and components, and stack for ease of identification and retrieval, in accordance with task sequence and job location.
- 2.5 Protect scaffolding tools, equipment and components against physical and water damage, and store clear of access ways for ease of identification, retrieval and distribution.
- 3 Store scaffolding tools, equipment and components.
- 3.1 Use safe handling techniques to move scaffolding tools, equipment and components manually or mechanically to storage area after conclusion of scaffolding task.
- 3.2 Clean, check, maintain and store scaffolding tools, equipment and components in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSC2001A Safely handle and use scaffolding tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSC2001 Handle and position scaffolding tools, equipment and components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSC2001A Safely handle and use scaffolding tools and equipment. Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by handling and locating scaffolding tools, equipment and components for three different scaffolding tasks.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for handling and positioning scaffolding tools, equipment and components under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - signage
 - environmental and worksite safety plans
 - reporting problems
- interpreting task plans and specifications relating to safely handling and locating scaffolding tools, equipment and components
- types, characteristics, uses and limitations of scaffolding tools and equipment:
 - hammers
 - ladders
 - nips
 - pallet trolleys
 - planks, including laminated
 - spanners
 - spirit levels

- tape measures
- processes for assisting mechanical handling equipment operator, including signalling methods
- storage requirements for scaffolding tools, equipment and components.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment used to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSC2002 Erect and dismantle basic scaffolding

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSC2002A Erect and dismantle basic scaffolding. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to erect and dismantle a range of modular scaffolding systems to provide work platforms for construction purposes. Scaffolding systems include edge protection, access ways and falsework (scaffold support systems for formwork).

It applies to those who work under the direction of more experienced workers to erect and dismantle a range of modular scaffolding systems.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare to erect and dismantle basic scaffolding. | 1.1 Read work order and associated documentation and clarify work tasks with relevant persons. |
| | 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements. |
| | 1.3 Select plant, tools and equipment, check for serviceability and rectify or report any faults. |
| | 1.4 Select and inspect scaffolding and components, and label and reject damaged components. |
| | 1.5 Calculate expected loading on scaffold and supporting structure using load tables and manufacturer specifications. |
| | 1.6 Identify site access and egress routes. |
| 2 Whip, tie, splice and inspect ropes. | 2.1 Inspect whipping cord and fibre rope for damage and wear. |
| | 2.2 Whip designated rope ends in accordance with work order and regulatory requirements. |
| | 2.3 Splice designated rope ends in accordance with work order and regulatory requirements. |
| | 2.4 Apply and inspect bends and hitches in accordance with work order. |
| 3 Erect basic scaffolding. | 3.1 Erect required safety signage and barricades and fit personal protective equipment (PPE). |
| | 3.2 Select sole board/base plate in accordance with regulatory and manufacturer requirements. |
| | 3.3 Set out and erect scaffolding in accordance with regulatory and manufacturer requirements. |
| | 3.4 Erect and install static lines where specified in |

- accordance with regulatory requirements.
- 3.5 Assemble and erect lifting device as specified.
- 4 Inspect, repair and alter erected basic scaffolding.
- 4.1 Inspect erected modular scaffolding for damage, corrosion, wear and compatibility.
- 4.2 Check current use of scaffolding against original design and confirm that it is in accordance with regulations and specifications.
- 4.3 Inspect and confirm scaffolding stability.
- 4.4 Carry out alteration or repair as necessary and within own level of responsibility.
- 4.5 Complete and date inspection log and handover certificate, ready for signing by a certified scaffolder.
- 5 Dismantle basic scaffolding.
- 5.1 Isolate scaffolding with appropriate signage and barricades to ensure safe dismantling.
- 5.2 Dismantle scaffolding, reversing procedure followed for erection.
- 6 Clean up.
- 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
- 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSC2002A Erect and dismantle basic scaffolding.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSC2002 Erect and dismantle basic scaffolding

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSC2002A Erect and dismantle basic scaffolding. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by:

- planning, erecting and dismantling a modular scaffolding system, in accordance with job safety and environmental analyses (JSEAs), safe work method statements (SWMSs) and regulations, and including:
 - five bays with an internal and external return
 - four lifts, including ties
 - ladder and stair access
 - fall and edge protection
- whipping, splicing, tying and inspecting five fibre ropes in accordance with regulations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for erecting and dismantling basic scaffolding under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - JSEAs
 - SWMSs
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements

- environmental and worksite safety plans
- reporting problems
- erection of scaffolding:
 - placement
 - sequencing
 - squaring
 - levelling
 - tying to structure
- scaffolding for:
 - work platforms
 - edge protection
 - access ways
 - falsework
 - grandstands
 - covered walkways
- lifting devices:
 - cantilevered hoists
 - gin wheels
- establishment of footings, including the review of JSEAs and SWMSs to determine the bearing capacity of ground or working surfaces
- whipping methods:
 - common
 - west countryman
 - American
 - sail makers
- splicing methods:
 - end splice
 - eye splice
- types of bends and hitches:
 - clove hitch around a tube
 - rolling hitch around a tube
 - single bow line
 - timber hitch
 - half hitch around a plank
 - sheet bend to another rope
- alteration and repair due to storm damage, accidents, misuse and process
- types, characteristics and limitations of tools, equipment and components required for erecting and dismantling basic scaffolding:
 - adjustable base plates
 - bends and hitches

- box spanners
- braces
- bracket scaffolds (tank and formwork)
- cantilevered hoists (materials only with maximum capacity of 500 kg)
- couplers and accessories
- fibre ropes
- guard rails
- hammers
- ledgers
- mesh guards
- mid rails
- modular and prefabricated scaffolds
- podgers
- hammers
- prefabricated components
- scaffold belts
- scaffolding planks
- spirit levels
- stairs or ladders
- standards
- steel and aluminium tubes
- tape measures
- torpedo levels
- transoms
- wire nips
- wrenches
- requirements for use of tools, equipment and materials for erecting and dismantling basic scaffolding:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements
- signalling methods and communications
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSC3001 Erect and dismantle intermediate scaffolding

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSC3001A Erect and dismantle intermediate scaffolding. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely erect and dismantle all types of tube and coupler scaffolding systems to provide work platforms for construction purposes and all work associated with modular scaffolding systems. Scaffolding systems include edge protection, access ways and falsework (scaffold support systems for formwork).

It applies to workers erecting and dismantling a range of modular scaffolding systems who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to erect and dismantle intermediate scaffolding.	1.1 Interpret work order and associated documentation and clarify requirements with relevant persons.
	1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.
	1.3 Select plant, tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
	1.4 Select and inspect scaffolding and components, and label and reject damaged components.
	1.5 Determine expected loading on scaffold and supporting structure using load tables and manufacturer specifications.
	1.6 Determine site access and egress routes.
2 Erect intermediate scaffolding.	2.1 Erect required safety signage and barricades and fit personal protective equipment (PPE).
	2.2 Select sole board/base plate in accordance with regulatory and manufacturer requirements.
	2.3 Set out and erect scaffolding in accordance with regulatory and manufacturer requirements.
	2.4 Erect and install static lines as specified in accordance with regulatory requirements.
	2.5 Assemble and erect lifting device as specified.
3 Inspect, repair and alter erected intermediate scaffolding.	3.1 Inspect erected tube and coupler scaffolding for damage, corrosion, wear and compatibility, and immediately isolate, label, tag and reject or replace faulty components.
	3.2 Check current use of scaffolding against original design and confirm that it is in accordance with regulations and

- specifications.
- 3.3 Inspect and confirm scaffolding stability.
 - 3.4 Carry out alteration or repair as necessary and within own level of responsibility.
 - 3.5 Complete and date inspection log and handover certificate, ready for signing by a certified scaffolder.
- 4 Dismantle intermediate scaffolding.
- 4.1 Isolate scaffolding with appropriate signage and barricades to ensure safe dismantling.
 - 4.2 Dismantle scaffolding, reversing procedure followed for erection.
- 5 Clean up.
- 5.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 5.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSC3001A Erect and dismantle intermediate scaffolding.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSC3001 Erect and dismantle intermediate scaffolding

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Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCSC3001A Erect and dismantle intermediate scaffolding. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by erecting and dismantling tube and coupler intermediate scaffolding, in accordance with job safety and environmental analyses (JSEAs), safe work method statements (SWMSs) and regulations, including:

- three bays and two lifts with an internal or external return
- one barrow ramp
- one spur
- fall and edge protection.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for erecting and dismantling intermediate scaffolding under applicable Commonwealth, state or territory work health and safety (WHS) legislation, Australian Standards and codes of practice:
 - JSEAs
 - SWMSs
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems

- clipping, tubing and fitting scaffolding with mast climbers, cantilevers, barrow ramps, spurs, longitudinal and transverse braces, random planks, putlogs and modular scaffolding:
 - planning
 - design
 - erection
 - alteration
 - dismantling
- erection of scaffolding:
 - placement
 - sequencing
 - squaring
 - levelling
 - tying to structure
- scaffolding for:
 - work platforms
 - edge protection
 - access ways
 - falsework
 - grandstands
 - covered walkways
- lifting devices:
 - mast climbers
 - cantilevered hoists
 - gin wheels
- establishment of footings, including the review of JSEAs and SWMSs to determine the bearing capacity of ground or working surfaces
- alteration and repair due to storm damage, accidents, misuse and process
- types, characteristics and limitations of tools, equipment and components required for erecting and dismantling intermediate scaffolding:
 - barrow ramps
 - box spanners
 - bracket scaffolds (tank and formwork)
 - cantilevered hoists (materials only with maximum capacity of 500 kg)
 - cantilevers
 - clips
 - couplers and accessories
 - gin wheels
 - hammers
 - ladders

- perimeter safety screens and shutters
- prefabricated components
- ropes
- scaffolding planks
- spirit levels
- spurs
- stairs
- steel and aluminium tubes
- tape measures
- tube and fitting scaffolding with mast climbers
- requirements for use of tools, equipment and materials for erecting and dismantling intermediate scaffolding:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- signalling methods and communications
- requirements for cleaning up work area, maintaining and storing tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF2001 Handle steelfixing materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2001A Handle steelfixing materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely and effectively handle, sort and store steelfixing materials. It includes identifying a range of commonly used materials, planning and preparing for work, safe and effective handling, sorting and storage of steelfixing materials, and completing clean-up activities.

It applies to those who work under the direction of more experienced workers to support steelfixing activities.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to handle steelfixing

1.1 Read work order and associated documentation and clarify work tasks with relevant persons.

- materials.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
 - 1.4 Erect required safety signage and barricades and fit personal protective equipment (PPE).
- 2 Handle, sort and stack steelfixing materials and components.
- 2.1 Identify and check materials and components to ensure they conform with material schedule, plans, quality requirements and specifications.
 - 2.2 Handle materials and components safely and effectively.
 - 2.3 Sort materials and components to suit material type and size, and stack for ease of identification and retrieval in accordance with task sequence.
 - 2.4 Protect materials and components against physical damage and stack/store clear of traffic-ways.
 - 2.5 Use dust suppression procedures to minimise health risk to people in the work area.
- 3 Handle and remove waste safely.
- 3.1 Handle waste materials and components correctly and safely in accordance with regulatory and workplace requirements.
 - 3.2 Identify hazardous material for separate handling in accordance with safety data sheets (SDSs) and regulatory requirements.
 - 3.3 Remove non-toxic materials using correct procedures in accordance with workplace requirements.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace

requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF2001A Handle steelfixing materials.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF2001 Handle steelfixing materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2001A Handle steelfixing materials.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by handling the following steelfixing materials on two occasions at two different sites:

- wire ties
- ligatures and spacer/spreader assemblies
- deformed bars
- plain rods
- bar chairs
- mesh sheets of plain bars
- mesh sheets of deformed bars
- scaffolding components
- pipe sections
- structural steel sections.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for handling steelfixing materials under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans

- reporting problems
- scope of work for handling steelfixing materials:
 - steelfixing materials:
 - wire ties
 - ligatures and spacer/spreader assemblies
 - deformed bars
 - plain rods
 - bar chairs
 - mesh sheets of plain bars
 - mesh sheets of deformed bars
 - scaffolding components
 - pipe sections
 - structural steel sections
 - methods of protecting stacked/stored materials:
 - covering
 - tying or banding
 - barricades
 - signs
 - locking away (hazardous materials)
- types, characteristics, uses and limitations of tools, equipment and materials required for handling steelfixing materials:
 - angle grinders
 - bolt cutters
 - general and hand-held power tools
 - measuring tapes and rules
 - mesh guillotines
 - oxy-acetylene sets and cutting attachments
 - reinforcement benders
 - tie wire reels
 - wire nippers
- requirements for tools, equipment and materials to erect and dismantle intermediate scaffolding:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- signalling methods and communications
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF2002 Use steelfixing tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2002A Use steelfixing tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely and effectively use steelfixing tools, plant and equipment. It includes identification, selection, storage, safe use and maintenance of a range of commonly used steelfixing tools, plant and equipment.

It applies to those who work under the direction of more experienced workers to support steelfixing activities.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to use steelfixing tools,

1.1 Read work order and associated documentation and clarify work tasks with relevant persons.

- plant and equipment.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Identify hazards and identify risk controls.
 - 1.4 Erect required safety signage and barricades and fit personal protective equipment (PPE).
- 2 Select and check steelfixing tools, plant and equipment.
- 2.1 Identify functions, operation and limitations of steelfixing tools, plant and equipment in accordance with manufacturer and workplace requirements.
 - 2.2 Review and follow WHS requirements for using steelfixing hand tools, power tools, plant and equipment.
 - 2.3 Select tools and equipment, including leads and hoses, tags, serviceability and safety, and rectify or report any faults.
 - 2.4 Check power tool guards, retaining bolts, couplings, gauges and controls, and maintain them in accordance with manufacturer requirements.
 - 2.5 Select equipment to hold or support material during operation.
 - 2.6 Perform pre-operational checks, including lubricants, hydraulic fluid and water, in accordance with manufacturer requirements.
- 3 Use steelfixing tools, plant and equipment.
- 3.1 Connect power and compressed air supply to work area.
 - 3.2 Follow start-up and shutdown procedures in accordance with manufacturer requirements.
 - 3.3 Use tools, plant and equipment safely and effectively in accordance with manufacturer and WHS requirements.
 - 3.4 Place tools, plant and equipment in safe location when not in immediate use.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace

requirements.

- 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF2002A Use steelfixing tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF2002 Use steelfixing tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2002A Use steelfixing tools and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by using steelfixing tools and equipment to complete two steelfixing tasks, using each of the following on at least one occasion:

- bolt cutters
- wire nippers
- tie wire reels
- angle grinders
- measuring tapes and rules
- general and hand-held power tools
- mesh guillotines
- cutting attachments
- generators for angle grinders
- reinforcement benders
- welding sets.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for using steelfixing tools and equipment under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements

- environmental and worksite safety plans
- reporting problems
- steelfixing materials:
 - deformed bars
 - ligatures and spacer/spreader assemblies
 - mesh sheets of deformed bars
 - mesh sheets of plain bars
 - plain rods
 - wire ties
- types, characteristics and limitations of steelfixing tools and equipment:
 - bolt cutters
 - wire nippers
 - tie wire reels
 - angle grinders
 - measuring tapes and rules
 - general and hand power tools
 - generators for angle grinders
 - reinforcement benders
 - welding sets
 - mesh guillotines
 - cutting attachments
- requirements for using steelfixing tools and equipment:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF2005 Arc weld reinforcement steel

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2005A Arc weld reinforcement steel.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to arc weld reinforcement to non-load bearing structural components as part of the construction process. It does not include specialist welding techniques.

It includes planning and preparing for the work, setting up for welding, welding the reinforcement, checking the reinforcement and completing clean-up activities.

It applies to those who work under the direction of more experienced workers to arc weld reinforcement steel.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to arc 1.1 Read work order and associated documentation and

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| weld reinforcement steel. | | clarify work tasks with relevant persons. |
| | 1.2 | Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements. |
| | 1.3 | Identify hazards and determine risk controls. |
| | 1.4 | Select plant, tools and equipment, check for serviceability and rectify or report any faults. |
| | 1.5 | Calculate materials quantities. |
| 2 Prepare work area to arc weld reinforcement steel. | 2.1 | Erect required safety signage and barricades and fit personal protective equipment (PPE). |
| | 2.2 | Obtain, prepare, and safely handle materials and locate them ready for use. |
| | 2.3 | Select fire extinguisher and locate so it is readily accessible before and during operations. |
| | 2.4 | Clean area of flammable material, scale and loose residual debris from reinforcement before welding. |
| 3 Arc weld reinforcement steel. | 3.1 | Weld reinforcement in accordance with job specifications and workplace requirements. |
| | 3.2 | Carry out tack welds to meet specifications relating to the diameter of the bar. |
| | 3.3 | Carry out welding at the required distance from bends or re-bends of reinforcement bars. |
| 4 Check reinforcement before use. | 4.1 | Check location and position of reinforcement and fixing ties for accuracy. |
| | 4.2 | Check depth of coverage, clearance, spacing and overlap before use. |
| 5 Clean up. | 5.1 | Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace |

requirements.

- 5.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF2005A Arc weld reinforcement steel.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF2005 Arc weld reinforcement steel

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2005A Arc weld reinforcement steel.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by arc welding reinforcement steel materials listed below for a minimum of five separate tasks:

- deformed bars
- plain rods
- mesh sheets of plain bars
- mesh sheets of deformed bars.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for arc welding reinforcement steel under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- reinforcing material to be welded:
 - deformed bars
 - plain rods
 - mesh sheets of plain bars
 - mesh sheets of deformed bars

- materials:
 - bar chairs
 - deformed bars
 - ligatures and spacer/spreader assemblies
 - mesh sheets of deformed bars
 - mesh sheets of plain bars
 - plain rods
 - welding consumables
 - wire ties
- types, characteristics and limitations of arc welding plant, tools and equipment:
 - manual metal arc welding (MMAW) equipment
 - angle grinders
 - bolt cutters
 - measuring tapes and rules
 - mesh guillotine
 - reinforcement benders
 - tie wire reels
 - wire nippers
- requirements for using arc welding plant, tools and equipment:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- requirements for cleaning up work area, maintaining and storing tools, plant, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF2006 Machine-cut reinforcement materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2006A Machine cut reinforcement materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to machine-cut reinforcement material components that form part of the construction process. It includes preparing and planning for the work, setting up the machine, cutting the reinforcing materials and completing clean-up activities.

It applies to those who work under the direction of more experienced workers to cut reinforcement materials with machine-cutting equipment for a construction project.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to machine-cut

1.1 Read work order and associated documentation and clarify work tasks with relevant persons.

- | | | |
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| reinforcement materials. | 1.2 | Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements. |
| | 1.3 | Identify hazards and determine risk controls. |
| | 1.4 | Select cutting machine, tools and equipment, check for serviceability and rectify or report any faults. |
| 2 Set up work area to machine-cut reinforcement materials. | 2.1 | Erect required safety signage and barricades and fit personal protective equipment (PPE). |
| | 2.2 | Conduct measurements and select cutting method in accordance with task specification and site conditions. |
| | 2.3 | Clean area of flammable material and erect barriers to contain waste material from cutting process. |
| | 2.4 | Provide a secure and safe work environment with stable base and platform for the reinforcing material. |
| | 2.5 | Set up cutting machine for operation in accordance with task specifications and manufacturer requirements. |
| 3 Machine-cut reinforcement materials. | 3.1 | Operate cutting machine safely in accordance with manufacturer and workplace requirements. |
| | 3.2 | Cut or dock reinforcement steel to prescribed lengths and configurations in accordance with task specifications. |
| | 3.3 | Cut fabric reinforcement to ensure allowances for element penetrations. |
| | 3.4 | Stack and bundle cut lengths to be included in reinforcing layout. |
| 4 Clean up. | 4.1 | Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. |
| | 4.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF2006A Machine cut reinforcement materials.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF2006 Machine-cut reinforcement materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2006A Machine cut reinforcement materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by machine-cutting each of the following reinforcement steel materials using a guillotine shear/cropper and an angle grinder:

- deformed bars
- mesh sheets of deformed bars
- mesh sheets of plain bars
- plain rods.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for machine-cutting reinforcement materials under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- reinforcement materials:
 - cutting consumables
 - deformed bars

- mesh sheets of deformed bars
- mesh sheets of plain bars
- plain rods
- types, characteristics and limitations of tools and equipment for machine-cutting reinforcement materials:
 - guillotine shear/cropper
 - angle grinders
 - bolt cutters
 - general hand and power tools
 - measuring tapes and rules
 - tie wire reels
 - wire nippers
- requirements for using tools and equipment for machine-cutting reinforcement materials:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF2007 Splice and anchor using mechanical methods

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2007A Splice and anchor using mechanical methods. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to mechanically splice and anchor reinforcement in concrete. It includes planning and preparing for the work, splicing and anchoring, and cleaning up.

It applies to those who work under the direction of more experienced workers to employ mechanical methods to splice and anchor materials in a steelfixing project.

Completion of the general construction induction training program, specified in the Safe work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to splice and anchor

1.1 Read work order and associated documentation and clarify work tasks with relevant persons.

- using mechanical methods.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Identify hazards and determine risk controls.
 - 1.4 Select plant, tools and equipment, check for serviceability and rectify or report faults.
 - 1.5 Calculate material requirements to meet task specifications.
 - 1.6 Obtain, prepare and safely handle materials for the task, and situate them ready for use.
- 2 2. Splice and anchor using mechanical methods.
- 2.1 Erect required safety signage and barricades and fit personal protective equipment (PPE).
 - 2.2 Thread reinforcement bars as detailed in task specifications.
 - 2.3 Configure detail of splicing arrangement in accordance with task specifications.
 - 2.4 Fit and secure splicing couplers to reinforcing bar in accordance with manufacturer handling instructions and task specifications.
 - 2.5 Secure reinforcement in accordance with prescribed tolerances.
 - 2.6 Free coupler connections and reinforcing bars of mill scale and residual debris that may foul connections.
 - 2.7 Locate and anchor reinforcement as prescribed in task specifications and relevant standards.
- 3 Check reinforcement before use.
- 3.1 Check location and position of reinforcement and fixing ties to reinforcement for accuracy.
 - 3.2 Check depth of coverage, clearance, spacing and overlap of reinforcement material conforms with task specifications and relevant standards.

- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 4.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF2007A Splice and anchor using mechanical methods.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF2007 Splice and anchor using mechanical methods

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF2007A Splice and anchor using mechanical methods. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by splicing and anchoring, using mechanical methods to complete the full mechanical splicing and anchoring cycle on a minimum of three occasions that include:

- foundations
- a slab
- one other structure.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for splicing and anchoring using mechanical methods under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE) requirements
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- types, characteristics and limitations of tools and equipment used for splicing and anchoring using mechanical methods:
 - bolt cutters
 - couplers
 - mechanical cutting equipment

- nippers
- tool belts
- measuring tapes
- requirements for using steelfixing tools and equipment:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- requirements for cleaning up work area, maintaining and storing tools, plant, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF3002 Carry out monostrand post-tensioning

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF3002A Carry out monostrand post-tensioning. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to carry out monostrand post-tensioning in accordance with specifications. It includes planning and preparing for the work, laying and fixing anchorages and cables, defining the work area, stressing tendons, finishing the tensioning and cleaning up.

It applies to workers carrying out monostrand post-tensioning for a construction project, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to 1.1 Interpret work order and associated documentation and

- carry out monostrand post-tensioning.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
 - 1.4 Calculate materials quantities and curing requirements.
 - 1.5 Obtain, prepare and safely handle materials for the task, and situate them ready for use.
 - 1.6 Erect required safety signage and barricades and fit personal protective equipment (PPE).
- 2 Lay and fix anchorages and cables.
- 2.1 Lay ducting profile, push through specified number of strands and verify in accordance with job drawings.
 - 2.2 Position profile anchorages to task specifications.
 - 2.3 Position form head and anchorages in accordance with task specifications.
 - 2.4 Inspect installed cables in accordance with specifications and relevant standards.
 - 2.5 Fix grout tubes in accordance with manufacturer requirements and engineering specifications.
 - 2.6 Monitor grout tubes during concrete pour.
- 3 Define the work area for monostrand post-tensioning.
- 3.1 After suitable curing time, define safe working area in accordance with WHS and regulatory requirements.
 - 3.2 Erect barricades and signage as required to isolate safe work areas.
- 4 Stress tendons.
- 4.1 Remove recess formers.
 - 4.2 Set up anchor blocks and wedges in accordance with manufacturer design.

- 4.3 Carry out stressing operations to nominated loads in accordance with engineering standards using authorised calibrated stressing equipment.
- 4.4 Measure extensions and record on standard forms for approval by engineer.
- 5 Finish the tensioning.
 - 5.1 Cut and seal protruding strands in accordance with manufacturer requirements.
 - 5.2 Mix cement grout and pump in accordance with specifications and relevant standards.
- 6 Clean up.
 - 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF3002A Carry out monostrand post-tensioning.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF3002 Carry out monostrand post-tensioning

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF3002A Carry out monostrand post-tensioning. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by carrying out a full monostrand post-tensioning cycle to specification that includes using:

- a five-strand tendon
- a minimum of 30 m in length
- standard tensioning.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for carrying out monostrand post-tensioning under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- use of monostrand post-tensioning to replace standard reinforcement materials with cables and, through tensioning, provide required strength in a reduced thickness of concrete
- interpretation of post-tensioning plans, including position of cables, height of chairs, cable specifications, number of strands per cable and stressing loads
- types, characteristics and limitations of tools and equipment used for carrying out monostrand post-tensioning:

- angle grinders
- grouting equipment
- hacksaws
- hammers
- hydraulic power packs
- measuring tapes and rules
- monostrand jacks
- nips
- spanners
- staple guns
- steelfixing reels
- specialist material-handling gloves
- requirements for using monostrand post-tensioning tools and equipment:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- requirements for cleaning up work area, maintaining and storing tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF3003 Carry out multistrand post-tensioning

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF3003A Carry out multistrand post-tensioning. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to carry out multistrand post-tensioning in accordance with specifications. It includes planning and preparing for the work, laying and fixing anchorages and cables, defining the work area, stressing tendons, finishing tensioning and cleaning up.

It applies to workers carrying out multistrand post-tensioning for a construction project, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to 1.1 Interpret work order and associated documentation and

- carry out multistrand post-tensioning.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
 - 1.4 Calculate materials quantities and curing requirements.
 - 1.5 Obtain, prepare and safely handle materials for the task, and situate them ready for use.
 - 1.6 Erect required safety signage and barricades and fit personal protective equipment (PPE).
- 2 Lay and fix anchorages and cables.
- 2.1 Fix tendons and recess formers in location in accordance with job drawings.
 - 2.2 Lay ducting profile, push through specified number of strands and verify in accordance with job drawings.
 - 2.3 Position profile anchorages in accordance with specifications.
 - 2.4 Position form head and anchorages in accordance with specifications.
 - 2.5 Inspect installed cables in accordance with specifications and relevant standards.
 - 2.6 Fix grout tubes in accordance with manufacturer requirements and engineering specifications.
 - 2.7 Monitor grout tubes during concrete pour.
- 3 Define work area for multistrand post-tensioning.
- 3.1 After suitable curing time, define safe working area in accordance with WHS and regulatory requirements.
 - 3.2 Erect barricades and signage as required to isolate safe work areas.

- | | | | |
|---|--------------------|-----|---|
| 4 | Stress tendons. | 4.1 | Remove recess formers. |
| | | 4.2 | Set up anchor blocks and wedges in accordance with manufacturer design. |
| | | 4.3 | Carry out stressing operations to nominated loads in accordance with engineering standards using authorised calibrated stressing equipment. |
| | | 4.4 | Measure extensions and record on standard forms for approval by engineer. |
| | | | |
| 5 | Finish tensioning. | 5.1 | Cut and seal protruding strands in accordance with manufacturer requirements. |
| | | 5.2 | Mix cement grout and pump in accordance with specifications and relevant standards. |
| | | | |
| 6 | Clean up. | 6.1 | Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. |
| | | 6.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF3003A Carry out multistrand post-tensioning.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF3003 Carry out multistrand post-tensioning

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF3003A Carry out multistrand post-tensioning. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by carrying out a full multistrand post-tensioning cycle to specification that includes using:

- a multistrand cable of at least 15 strands
- a minimum of 30 m in length
- standard tensioning.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for carrying out multistrand post-tensioning under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- use of multistrand post-tensioning to replace standard reinforcement materials with cables and, through tensioning, provide required strength in a reduced thickness of concrete
- interpretation of post-tensioning plans, including position of cables, height of chairs, cable specifications, number of strands per cable and stressing loads
- types, characteristics and limitations of tools and equipment used to carry out multistrand post-tensioning:

- angle grinders
- grouting equipment
- hacksaws
- hammers
- hydraulic power packs
- measuring tapes and rules
- multistrand jacks
- nips
- spanners
- staple guns
- steelfixing reels
- specialist material-handling gloves
- requirements for using multistrand post-tensioning tools and equipment:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- requirements for cleaning up work area, maintaining and storing tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF3004 Carry out stressbar post-tensioning

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF3004A Carry out stressbar post-tensioning. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to carry out stressbar post-tensioning in accordance with specifications. It includes planning and preparing for the work; placing and inspecting bars, components and ducts; defining the work area; stressing bars; finishing the tensioning; and cleaning up.

It applies to workers carrying out stressbar post-tensioning for a construction project, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to 1.1 Interpret work order and associated documentation and

- carry out stressbar post-tensioning.
- 1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.3 Select tools and equipment required for work tasks, check for serviceability and rectify or report identified faults.
 - 1.4 Calculate materials quantities and curing requirements.
 - 1.5 Obtain, prepare and safely handle materials for the task, and situate them ready for use.
 - 1.6 Erect required safety signage and barricades and fit personal protective equipment (PPE).
- 2 Place and inspect bar, fit components and seal ducts.
- 2.1 Place bar and fit components in accordance with manufacturer requirements and task specifications.
 - 2.2 Inspect bar layout for compliance with task specifications and relevant standards.
 - 2.3 Seal ducts in accordance with manufacturer requirements.
- 3 Define work area for stressbar post-tensioning.
- 3.1 After suitable curing time, define safe working area in accordance with WHS and regulatory requirements.
 - 3.2 Erect barricades and signage as required to isolate safe work areas.
- 4 Stress bars.
- 4.1 Place stressing jack and accessories and carry out stressing in accordance with manufacturer requirements and engineering specifications.
 - 4.2 Tighten and lock off nuts during stressing procedure in accordance with normal stressing safety standards.
 - 4.3 Measure extensions and record on standard quality assurance forms for approval by engineer.

- 5 Finish tensioning.
 - 5.1 Seal anchorages to prevent grout loss.
 - 5.2 Mix cement grout and pump in accordance with specifications and relevant standards.

- 6 Clean up.
 - 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements.
 - 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF3004A Carry out stressbar post-tensioning.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF3004 Carry out stressbar post-tensioning

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSF3004A Carry out stressbar post-tensioning. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by carrying out a full stressbar post-tensioning cycle to specification that includes using:

- two different bar sizes
- a minimum of 30 m in length
- standard tensioning.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for carrying out stressbar post-tensioning under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- use of stressbar post-tensioning to replace standard reinforcement materials with metal bars and, through tensioning, provide required strength in a reduced thickness of concrete
- interpretation of post-tensioning plans, including position of bars, height of chairs, bar specifications, coupling arrangements for bars and stressing loads
- types, characteristics and limitations of tools and equipment used for carrying out stressbar post-tensioning:

- angle grinders
- bar jacks
- couplers
- grouting equipment
- hacksaws
- hammers
- hydraulic power packs
- measuring tapes and rules
- nips
- spanners
- staple guns
- steelfixing reels
- specialist material-handling gloves
- requirements for using stressbar post-tensioning tools and equipment:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- requirements for cleaning up work area and tools, for plant and materials storage, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSSH2003 Apply and install sealant and sealant devices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSSH2003A Apply and install sealant and sealant devices. Updated to meet the Standards for Training Packages.

Application

This unit of competency specifies the skills and knowledge required to apply sealants and sealant devices to structures.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------|-----|--|
| 1 Plan and prepare. | 1.1 | Review work instructions to apply and install sealant and sealant devices. |
| | 1.2 | Plan all work to comply with laws and regulations, national construction codes, Australian Standards, work |

- health and safety (WHS) and environmental requirements, manufacturers' specifications and safety data sheets (SDS), workplace requirements, drawings and specifications.
- 1.3 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.4 Select tools and equipment, check for serviceability and report any faults.
 - 1.5 Calculate sealant material quantities to meet work instructions.
 - 1.6 Identify, obtain and prepare required materials and safely locate them ready for use.
- 2 Prepare surface to receive sealants.
 - 2.1 Clean surface free of contaminants in accordance with manufacturer instructions.
 - 2.2 Prepare surface by sanding or cleaning in accordance with manufacturer specifications.
- 3 Apply sealant.
 - 3.1 Apply sealant materials in accordance with manufacturer specifications.
 - 3.2 Check to ensure no air has been trapped within applied sealant and rectify as required.
 - 3.3 Align surfaces and install fixings in accordance with manufacturer specifications.
- 4 Install sealant devices.
 - 4.1 Fit sealant devices securely to specified positions.
 - 4.2 Secure installation of fixture and check to ensure level and plumb to line.
- 5 Clean up.
 - 5.1 Remove excess sealant from joints and surrounding surfaces and securely seal cartridge nozzle or container.
 - 5.2 Promptly remove sealants from tools and equipment.

- 5.3 Clean up work site, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
- 5.4 Check, maintain and store tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCSH2003A Apply and install sealant and sealant devices.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSH2003 Apply and install sealant and sealant devices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCSH2003A Apply and install sealant and sealant devices. Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by applying and installing sealants and sealant devices on at least one occasion involving:

- applying the following sealant materials:
 - bitumen
 - mastic
 - putty
 - silicone
 - waterproof paint
- installing the following sealant devices:
 - cover plates to aluminium framework
 - cover straps or beading to sheet jointing
 - flashings to window and door frames
 - impregnated material for masonry expansion joints
 - strip or sheet membrane.

All work must be performed to the standard required in the workplace and must comply with work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- behaviour of sealant materials used in structures
- mathematical processes required to measure and calculate surface area
- requirements of Commonwealth and state or territory work health and safety (WHS) legislation relevant to applying and installing sealant and sealant devices
- types and performance of sealants used in buildings

- workplace quality policies and standards for applying and installing sealant and sealant devices
- safety requirements for applying and installing sealant and sealant devices including safety data sheets
- types and uses of personal protection equipment and hand tools and equipment relevant to sealant application and installation work:
 - brooms
 - brushes
 - cartridge applicators
 - putty knives and paring knives
 - rollers
 - sanders
 - spray equipment

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSP2001 Handle solid plastering materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCSP2001A Handle solid plastering materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely and effectively handle, sort, prepare, position and remove solid plastering materials.

The unit is suitable for people with basic skills and knowledge who undertake routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|--|-----|---|
| 1 | Plan and prepare to handle solid plastering materials. | 1.1 | Read and interpret work instructions and plan sequence of work. |
| | | 1.2 | Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades, and identify hazardous materials for separate handling by authorised personnel.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
- 2 Handle, sort and store solid plaster materials.
- 2.1 Check materials for compliance to plans and specifications.
 - 2.2 Determine handling requirements for materials from manufacturers' specifications and select and use safe manual and mechanical handling techniques.
 - 2.3 Sort materials for type and size, distribute to job locations, both manually and using mechanical devices, and stack for ease of access, task sequence and clear of traffic ways.
 - 2.4 Protect materials against physical and water damage.
- 3 Remove materials and clean up.
- 3.1 Determine handling requirements for unused materials and select and use safe handling techniques following safety data sheets.
 - 3.2 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 3.3 Identify hazardous materials for separate handling by authorised personnel.
 - 3.4 Use dust suppression procedures to minimise health risk to self and others.
 - 3.5 Store reusable materials and protect against physical and water damage.
 - 3.6 Clean tools and equipment, check for serviceability,

report any damage or faults and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCS2001A Handle solid plastering materials.

Links

Companion volumes to this training package are available at the VETNet website - -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP2001 Handle solid plastering materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP2001A Handle solid plastering materials.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by safely manually and mechanically handling and preparing a minimum of five solid plastering materials, including hazardous materials, for two separate solid plastering projects, and cleaning up after each project.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards and work health and safety legislation for handling solid plastering materials, including *HB161 Guide to plastering*
- workplace quality policies and standards for handling solid plastering materials
- safety requirements for handling solid plastering materials, including:
 - job safety analyses and/or safe work method statements in accordance with *Safe Work Australia Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- handling requirements for materials for solid plastering, including:
 - loose materials
 - bagged materials
 - bucketed materials
 - pre-mixed materials
 - corner beads
 - casing beads
 - timber or expanded metal lathing (EML)

- plaster compounds and finishing coats
- additives, such as plasticisers, colour and waterproofing agents
- types and uses of tools and equipment for handling solid plastering materials
- types and uses of plans and specifications for handling solid plastering materials
- processes for identifying and handling hazardous materials
- environmental and sustainability requirements for handling and disposing of solid plastering materials.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP2002 Use solid plastering tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP2002A Use solid plastering tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely select, check, use and store tools and equipment for solid plastering.

The unit is suitable for people with basic skills and knowledge who undertake routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Plan and prepare to use solid plastering tools and equipment. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.4 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
- 2 Select and check tools and equipment.
 - 2.1 Select tools and equipment for the task based on their functions and limitations, check for serviceability and report any faults.
 - 2.2 Check power tools and electrical leads are tested and tagged.
 - 2.3 Conduct pre-operational checks on tools and equipment to manufacturers' specifications.
 - 2.4 Examine power tools and equipment to ensure guards are fitted and working, blades and attachments are secured, and switches are operational.
 - 3 Use tools and equipment.
 - 3.1 Follow start-up and shut-down procedures.
 - 3.2 Use tools and equipment, applying safe work practices to perform solid plastering task.
 - 4 Clean up.
 - 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCS2002A Use solid plastering tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP2002 Use solid plastering tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP2002A Use solid plastering tools and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by using all of the following solid plastering tools and equipment on a minimum of three different solid plastering tasks:

- a power grinder
- a cement mixer
- a power saw
- an air compressor
- a level
- a float
- a sponge float
- a screed
- a shovel
- a wheel barrow
- mud board and stand
- tin snips
- water brush
- a paint brush
- a handboard/hawk
- a screw gun
- a hammer
- a comb
- a sprayline
- a small tool
- a tape measure.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for using solid plastering tools and equipment
- manufacturers' specifications for solid plastering tools and equipment
- workplace quality policies and standards for using solid plastering tools and equipment
- safety requirements for using solid plastering tools and equipment, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for using solid plastering tools and equipment
- functional and operational features of tools and equipment, including:
 - a power grinder
 - a cement mixer
 - a power saw
 - an air compressor
 - a level
 - a float
 - a sponge float
 - a screed
 - a shovel
 - a wheel barrow
 - mud board and stand
 - tin snips
 - water brush
 - a paint brush
 - a handboard/hawk
 - a screw gun
 - a hammer
 - a comb
 - a sprayline
 - a small tool
 - a tape measure.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP2003 Prepare surfaces for plastering

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP2003A Prepare surfaces for plastering. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to prepare substrates for solid plastering. It includes patching or filling holes in floors, sheet or masonry walls and ceiling surfaces.

The unit is suitable for people with basic skills and knowledge who undertake routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare to prepare surfaces for plastering. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the |

- National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Patch holes and depressions.
- 2.1 Determine patching methods and materials from type of material surface, size of hole/depression, compatibility of materials and planned finish.
 - 2.2 Apply materials using appropriate application methods.
- 3 Prepare surface.
- 3.1 Determine method of preparation of surface to suit the type of finish.
 - 3.2 Remove protruding and loose materials and prepare surface for solid plastering.
 - 3.3 Apply sealing or primer coat to prepared surface.
- 4 Clean up.
- 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCS2003A Prepare surfaces for plastering.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP2003 Prepare surfaces for plastering

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP2003A Prepare surfaces for plastering.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by preparing surfaces with various product faults and damage, including chipped corners, holes and depressions on each of:

- a minimum of 2 square metres of masonry wall
- an engaged or attached pier with a minimum width of 250 mm and height of 1.0 m
- a minimum 2 square metres of sheet wall
- a minimum 2 square metres of ceiling.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for preparing surfaces for plastering
- workplace quality policies and standards for preparing surfaces for plastering
- safety requirements for preparing surfaces for plastering, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for preparing surfaces for plastering
- characteristics, application and limitations of materials for preparing surfaces for plastering, including:
 - primers and sealants

- plaster compounds and finishing coats
- additives, such as plasticisers, colour and waterproofing agents
- processes, procedures and techniques for:
 - preparing various surfaces for plastering
 - calculating material requirements
- types and uses of tools and equipment for preparing surfaces for plastering
- types and uses of plans, drawings and specifications for preparing surfaces for plastering.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP3001 Apply float and render to straight and curved surfaces

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from *CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry* to *CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry*.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3001A Apply float and render to straight and curved surfaces. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to float, render and finish flat and curved solid plastering work.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them, without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|--|
| 1 Plan and prepare to apply float and render to straight and curved surfaces. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements. |
| | 1.3 Select and use personal protective equipment (PPE) for each stage of the task. |
| | 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.5 Select tools and equipment, check for serviceability and report any faults. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| | 1.7 Select and use profiles, pins or hooks to prepare columns and piers. |
| 2 Prepare templates for curved work and circular columns. | 2.1 Select template material for curved work and circular columns. |
| | 2.2 Establish shapes and radiuses for curves and columns, and fabricate and form templates. |
| 3 Prepare background surface. | 3.1 Prepare background surface by brooming, wire brushing, scarifying and cleaning. |
| | 3.2 Mix dash coat and apply to wetted surface. |
| | 3.3 Apply bonding coat. |
| | 3.4 Select and fix proprietary/metal beads for external or squint arises and check for accuracy. |

- | | | |
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| 4 Apply floating and rendering to flat and curved surfaces. | 4.1 | Establish screeding lines or guides to Australian Standard HB161 Standards and tolerances guide to solid plastering. |
| | 4.2 | Apply floating coat and rule off to screed. |
| | 4.3 | Finish, plumb and level surface to alignment tolerance. |
| | 4.4 | Finish heads, reveals and sills square off to wall ace and back into opening. |
| | 4.5 | Cut internal angles, ceilings and floor lines. |
| 5 Apply floating and rendering coats to piers. | 5.1 | Apply floating coat using floating profiles, rules and Dutch pins or hooks so that face of pier is plumb and ruled-off. |
| | 5.2 | Square-off surface to form returns and reveals, and remove rules leaving arises square or radiused. |
| 6 Apply floating coat within metal beading. | 6.1 | Fix proprietary/metal beading to base surface to form a panel with expansion joint so that panel is plumb and square to specified position. |
| | 6.2 | Finish panels to true, flat surfaces suitable for applying plaster and lime setting and/or proprietary texture finishes. |
| 7 Finish rendering coats on flat walls, piers and curved work. | 7.1 | Hand-float walls to fill slacks and voids to finish surfaces. |
| | 7.2 | Scour and fine walls using water and hand float systems. |
| 8 Clean up. | 8.1 | Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice. |
| | 8.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCSF3001A Apply float and render to straight and curved surfaces.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSP3001 Apply float and render to straight and curved surfaces

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCSP3001A Apply float and render to straight and curved surfaces. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by preparing the surfaces, fixing casing and corner beads and applying float and render coats to:

- a minimum 2.1m high straight masonry surface with an internal corner and an opening containing a head, reveals and a sill
- a minimum 1.5m high x 1.8m wide curved surface
- a minimum 1.5m high x 300mm diameter column
- a minimum 1.5m high square or rectangular pier.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards, including HB161, for applying float and render to straight and curved surfaces
- workplace quality policies and standards for applying float and render to straight and curved surfaces

- safety requirements for applying float and render to straight and curved surfaces, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for applying float and render to straight and curved surfaces
- uses of materials and components for solid plastering, including:
 - corner beads
 - casing beads
 - timber or expanded metal lathing (EML)
 - sand, lime and lime putty
 - plaster compounds and finishing coats
 - additives, such as plasticisers, colour and waterproofing agents
- processes and techniques of applying float and render to straight and curved surfaces
- types and uses of tools and equipment for applying float and render to straight and curved surfaces
- types and uses of plans, drawings and specifications for applying float and render to straight and curved surfaces.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP3002 Apply set coats

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3002A Apply set coats. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to mix and apply set coats to flat and curved solid plaster backgrounds.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them, without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare to apply set coats. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and |

- environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare backgrounds for set coat application.
- 2.1 Select surface preparation process to suit the specified setting coat.
 - 2.2 Check surface for level of suction appropriate for the coat setting.
 - 2.3 Clean surface and wet down to provide an even suction for the setting rate of the setting coat.
 - 2.4 Check adequacy of suction rate.
- 3 Mix and apply plaster and lime setting.
- 3.1 Select suitable mix ratios of plaster and lime for background substrates.
 - 3.2 Mix plaster and lime setting and check that ratios are adequate.
 - 3.3 Apply set coats.
 - 3.4 Trowel surface to required hardness, smoothness and finish.
- 4 Clean up.
- 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCS3002A Apply set coats.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP3002 Apply set coats

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3002A Apply set coats. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by applying set coats and trowelling surfaces to achieve a level of finish within specified tolerances to:

- a minimum 4 square metres of vertical surface, including an opening with a head, sill and reveals
- a minimum 4 square metres of horizontal surface
- a minimum 4 square metres of curved surface.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for applying set coats
- workplace quality policies and standards for applying set coats
- safety requirements for applying set coats, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for applying set coats
- characteristics of substrates for set coats, including:
 - masonry
 - sheeting
- uses of approved materials and components for solid plastering:
 - corner beads

- casing beads
- timber or expanded metal lathing (ELP)
- sand, lime and lime putty
- plaster compounds and finishing coats
- additives, such as plasticisers, colour and waterproofing agents
- processes and techniques for mixing and applying set coats
- types and uses of tools and equipment for mixing and applying set coats
- types and uses of plans, drawings and specifications for applying set coats.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP3003 Apply trowelled texture coat finishes

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting in Element and Performance Criteria.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3003A Apply trowelled texture coat finishes. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to mix and apply trowelled texture coat finishes.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them, without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to apply trowelled texture coat finishes.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare surface and mix and apply texture coat.
 - 2.1 Prepare substrate for the specified trowelled texture coat finish.
 - 2.2 Mix texture coating materials to designed proportion and consistency.
 - 2.3 Apply texture coat with trowel to a uniform finish to Australian Standards. with specified thickness.
- 3 Finish and cure texture coat
 - 3.1 Finish texture coat plumb and level.
 - 3.2 Cure texture coat to weather and/or temperature conditions.
- 4 Clean up.
 - 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCS3003A Apply trowelled texture coat finishes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP3003 Apply trowelled texture coat finishes

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting in Element and Performance Criteria.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3003A Apply trowelled texture coat finishes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

- applying a trowelled texture coat finish to a minimum of 4 square metres of curved wall
- applying a different trowelled texture coat finish to a minimum of 4 square metres of masonry wall containing an internal and external corner and an opening with a head, reveals and a sill.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for applying trowelled texture finishes
- quality policies and standards for applying trowelled texture finishes
- safety requirements for applying trowelled texture finishes, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for applying trowelled texture finishes
- techniques for applying trowelled texture finishes
- types and uses of decorative finishes, including:

- Stucco Venezia
- Travertine
- types and uses of materials and components for solid plastering, including:
 - acrylic or styrene/acrylate coatings
 - proprietary texture coat finishes products
- types and uses of tools and equipment for applying trowelled texture finishes
- types and uses of plans, drawings and specifications for applying trowelled texture finishes.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP3004 Restore and renovate solid plasterwork

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3004A Restore and renovate solid plasterwork. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to apply processes and techniques to repair damage in lime mortar cement render and solid plaster surfaces.

It includes restoration and renovation of plasterwork and lettering.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them, without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare to restore and renovate solid plaster work.	<p>1.1 Read and interpret work instructions and plan sequence of work.</p> <p>1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.</p> <p>1.3 Select and use personal protective equipment (PPE) for each stage of the task.</p> <p>1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.</p> <p>1.5 Select tools and equipment, check for serviceability and report any faults.</p> <p>1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.</p>
2 Select restoration or renovation method.	<p>2.1 Determine extent and type of restoration or renovation by site examination and from plans and specifications.</p> <p>2.2 Prepare drawing and template of damaged area to profile/moulding shape of existing work.</p>
3 Restore plasterwork.	<p>3.1 Remove flaky, damaged and loose plasterwork.</p> <p>3.2 Clean and prepare substrate.</p> <p>3.3 Mix materials to ratios suitable for task.</p> <p>3.4 Apply and finish solid render to match existing render finish, details and alignment.</p> <p>3.5 Restore surrounding plasterwork.</p>
4 Renovate lettering and monograms.	<p>4.1 Prepare surface for renovation to specification.</p> <p>4.2 Construct monograms and lettering panels in sand and cement mortar to match detail for restorations.</p>

- 4.3 Mix materials to ratios suitable for task.
 - 4.4 Apply materials to fine finish with sharp arises, square returns and plumb/level to requirements.
- 5 Clean up.
- 5.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 5.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCSP3004A Restore and renovate solid plasterwork.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP3004 Restore and renovate solid plasterwork

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3004A Restore and renovate solid plasterwork. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

- restoring solid plasterwork to:
 - a minimum of 4 square metres of curved surface
 - a minimum of 4 square metres of ceiling
 - a minimum 1.2 metre high archway or column
- renovating a monogram and two letters using moulds
- pre-treating and restoring a spall area.

All work must be performed to the standard required in the workplace and must comply with the National Construction Code (NCC), Australian Standards, laws and regulations, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for restoring and renovating solid plasterwork
- workplace quality policies and standards for restoring and renovating solid plasterwork
- safety requirements for restoring and renovating solid plasterwork, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)

- personal protective equipment (PPE)
- environmental requirements for restoring and renovating solid plasterwork
- uses of materials and components for restoring and renovating solid plasterwork, including:
 - corner beads
 - casing beads
 - sand, lime and lime putty
 - plaster compounds and finishing coats
 - additives, including plasticisers, colour and waterproofing agents
- texture/proprietary finishes
- processes and techniques for renovating and restoring solid plasterwork
- types and uses of tools and equipment for restoring and renovating solid plasterwork
- types and uses of plans, drawings and specifications for restoring and renovating solid plasterwork.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP3005 Install pre-cast decorative mouldings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3005A Install pre-cast decorative mouldings. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install pre-cast decorative mouldings to masonry, plasterboard and cement sheets.

It includes measuring, cutting and fixing of cast plaster and finishing junctions for painting.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them, without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan and prepare to install pre-cast | 1.1 Read and interpret work instructions and plan sequence of work. |
|--|---|

- decorative mouldings.
- 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
 - 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Install pre-cast moulded archway.
- 2.1 Check substrate and set out and cut archway profile to specifications.
 - 2.2 Cut, position and fix timber arch soffit templates.
 - 2.3 Fix infill moulding to arch soffit and reveals of opening.
 - 2.4 Stop arch to specifications and level of finish.
- 3 Fix plaster panelled ceiling.
- 3.1 Set out, position, fix and space ceiling battens for cornice margins and flush mounted panels.
 - 3.2 Locate, level and line-up, and fix panels on ceiling.
 - 3.3 Finish jointing to meet ceiling plastering requirements.
 - 3.4 Sand and clean surface in preparation for painting.
- 4 Fix ornamental mouldings.
- 4.1 Measure and cut ornamental mouldings to specification.
 - 4.2 Select fastening method for moulding.
 - 4.3 Set out and mark position of ornamental moulding.
 - 4.4 Position and fix moulding straight and level.

- 4.5 Finish mouldings, including straight stoppings and mitres to specification.
- 5 Clean up.
 - 5.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 5.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCS3005A Install pre-cast decorative mouldings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP3005 Install pre-cast decorative mouldings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3005A Install pre-cast decorative mouldings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing and finishing three different pre-cast mouldings, including:

- one on a ceiling
- one to an external window
- a decorative cover strap, dado or a skirting on an internal wall
- a moulded archway.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for installing pre-cast decorative mouldings
- workplace quality policies and standards for installing pre-cast decorative mouldings
- safety requirements for installing pre-cast decorative mouldings, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- processes, procedures and techniques for:
 - measuring, cutting, fixing, stopping, installing and finishing pre-cast decorative moulding
 - storing materials and components
 - calculating materials using measurements and formulas

- types and uses of pre-cast decorative moulding installation materials
- types and uses of tools and equipment for installing pre-cast decorative mouldings
- types and uses of plans, drawings and specifications for installing pre-cast decorative mouldings
- environmental and sustainability requirements for installing pre-cast decorative mouldings.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP3006 Install cast plaster blockwork and wall sheet panels

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3006A Install cast plaster brickwork.
Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to set out and construct a wall by laying cast plaster blocks.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them, without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to install plaster blockwork and wall sheet panels.	1.1	Read and interpret work instructions and plan sequence of work.
	1.2	Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian

- Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.
- 1.3 Select and use personal protective equipment (PPE) for each stage of the task.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Set out and prepare base for blockwork and wall sheet panels.
- 2.1 Clean base in preparation for first course.
 - 2.2 Set out blockwork and panels to position, and prepare surface to be dry, horizontal and flat.
 - 2.3 Set out position, gauge and bond of blockwork and panels to batten at specified fixing points.
- 3 Lay plaster blockwork and wall sheet panels.
- 3.1 Prepare adhesives to required consistency and quantity to manufacturers' specifications.
 - 3.2 Lay base course to set out line.
 - 3.3 Install blockwork/wall sheet panels and vertical abutments level, plumb and straight.
 - 3.4 Maintain bond and gauge to the set out height and width.
 - 3.5 Remove surplus adhesive and clean blocks.
 - 3.6 Apply solid plaster and finish to requirements.
- 4 Clean up.
- 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCSP3006A Install cast plaster brickwork.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCSP3006 Install cast plaster blockwork and wall sheet panels

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and equivalent to CPCPCSP3006A Install cast plaster brickwork.
Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by installing a minimum:

- 3.6m long X 1.8m high pre-cast plaster blockwork
- three sheet panelled wall.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for installing cast plaster blockwork and wall sheet panels
- workplace quality policies and standards for installing cast plaster blockwork and wall sheet panels
- safety requirements installing cast plaster blockwork and wall sheet panels, including:
 - job safety analyses and/or safe work method statements in accordance with *Safe Work Australia Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for installing cast plaster blockwork and wall sheet panels
- processes, procedures and techniques for:
 - checking substrates for suitability
 - cutting for openings
 - plaster blockwork
 - installing, fixing wall sheet panelling

- beading
- solid plastering and finishing
- calculating material requirements
- types and uses of tools and equipment for installing cast plaster blockwork and wall sheet panels
- types and uses of plans, drawings and specifications for installing cast plaster blockwork and wall sheet panels.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSP3007 Apply plaster by projection machine

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3007A Apply plaster by projection machine. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to apply pre-blended plasters, cement render and acrylic texture materials on various background surfaces using a projection plastering system.

It includes application to walls, ceilings, inclined surfaces, sills and arches.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them, without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare to apply plaster by projection machine. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements. |
| | 1.3 Select and use personal protective equipment (PPE) for each stage of the task. |
| | 1.4 Inspect work site, assess hazards and apply risk controls. |
| | 1.5 Select tools and equipment, check for serviceability and report any faults. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Prepare work area. | 2.1 Mask up and protect area surrounding work area. |
| | 2.2 Set up and position mixing pump. |
| | 2.3 Clear and clean application area for projection plastering application. |
| | 2.4 Place barricades and signage to minimise disruption to application process. |
| 3 Apply materials. | 3.1 Conduct prestart checks of projection machine. |
| | 3.2 Operate mixing pump to produce material of specified consistency to suit environmental conditions. |
| | 3.3 Apply materials using projection plastering machine to achieve specified finish. |
| | 3.4 Screed material to thickness specified by Australian Standards. |

- 4 Clean up.
 - 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCS3007A Apply plaster by projection machine.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP3007 Apply plaster by projection machine

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSP3007A Apply plaster by projection machine. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by applying plaster using a projection machine to a minimum of 3 square metres of wall surface and a minimum 3 square metres of ceiling.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for applying plaster by projection machine
- workplace quality policies and standards for applying plaster by projection machine
- safety requirements for applying plaster by projection machine, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for applying plaster by projection machine
- processes, procedure and techniques of:

- conducting prestart checks
- mixing materials for projection machines
- applying plaster using projection machine
- operating various projection machines
- calculating material using measurements and formulas
- types and uses of tools and equipment for applying plaster by projection machine, including:
 - piston driven projection machines
 - air driven/spray projection machines
- types and uses of plans, drawings and specifications for applying plaster by projection machine.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSP3008 Carry out conite construction and wall sheet panelling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit specifies the skills and knowledge required to carry out conite construction and wall sheet panelling.

It includes preparing the surface by fixing building paper and securing lathing to wall framing.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them, without close supervision.

Licensing, legislative or certification requirements may apply to this unit.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plastering

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to carry out conite

1.1 Read and interpret work instructions and plan sequence of work.

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| construction and wall sheet panelling. | 1.2 | Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements. |
| | 1.3 | Select and use personal protective equipment (PPE) for each stage of the task. |
| | 1.4 | Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.5 | Select tools and equipment, check for serviceability and report any faults. |
| | 1.6 | Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| | 1.7 | Erect and brace scaffolding to required height in accordance with licensing requirements. |
| | 2 Prepare surface. | 2.1 |
| | 2.2 | Fix building paper taut to face of frame in compliance with NCC. |
| | 2.3 | Fit and fix expanded metal lathing (ELP). |
| | 2.4 | Fix wall sheet panel to framing in compliance with NCC. |
| 3 Apply concrete finish. | 3.1 | Apply sand, cement and lime scratch coat. |
| | 3.2 | Apply floating coat. |
| | 3.3 | Screed and trowel to specified finish. |
| 4 Clean up. | 4.1 | Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice. |
| | 4.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSP3008 Carry out conite construction and wall sheet panelling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by applying conite construction, including wall sheet panels, to a minimum of 4 square metres of timber or metal frame wall, including applying a three coat finish system.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the NCC and Australian Standards for carrying out conite construction and wall sheet panelling
- workplace quality policies and standards for conite construction/wall sheet panels
- safety requirements for carrying out conite construction and wall sheet panelling, including:
 - job safety analyses and/or safe work method statements in accordance with *Safe Work Australia Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements for carrying out conite construction and wall sheet panelling
- processes, procedures and techniques for carrying out conite construction and wall sheet panelling
- types and uses of tools and equipment for carrying out conite construction and wall sheet panelling
- types and uses of plans, drawings and specifications for carrying out conite construction and wall sheet panelling.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCS2001 Prepare for stonemasonry construction process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCS2001A Prepare for the stonemasonry construction process. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to undertake the preparation processes required to support the laying or placement of stone. It includes assisting in stonemasonry work by preparing materials and using a range of tools and equipment.

The unit is suitable for people with basic skills and knowledge who undertake routine stonemasonry work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Read, interpret and apply stonemasonry construction requirements from current plans, specifications, standards and codes and confirm information with

- relevant person.
- 1.2 Source information and communicate with others using digital technology.
 - 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.4 Clarify job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Use measurements and apply formulas to calculate material quantities.
- 2 Prepare the work.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Check conformity of materials against the job requirements.
 - 2.3 Select and blend stone colours as instructed and position materials ready for use.
 - 2.4 Select and check condition of equipment and tools required for the job and report damage or faults to supervisor.
 - 2.5 Prepare equipment and materials for mixing of mortar or adhesives.
 - 2.6 Set up cement mixer, locate mortar boards and clear pathways for supply of mortar.
- 3 Assist with stonemasonry work.
- 3.1 Maintain a supply of mortar to boards and stone to stacks.
 - 3.2 Use hand and power tools to clean, cut and prepare stone for laying.
 - 3.3 Assist in the set out, erection and stabilising of the scaffold.
 - 3.4 Clean finished stonework prior to mortar drying.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST2001A Prepare for stonemasonry construction process

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST2001 Prepare for stonemasonry construction process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST2001A Prepare for the stonemasonry construction process. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by assisting with two stone masonry laying project on two different sites.

In doing this, the candidate must:

- clear the work area, position masonry materials ready for laying
- mix mortar or adhesive to job specifications and maintain sufficient quantities on mortar boards
- maintain a clean and safe workplace.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials for stonemasonry construction
- igneous, metamorphic and sedimentary rocks and the appropriate tools to work on these type of rocks
- construction terminology relating to stonemasonry construction
- mortar and adhesive ingredients and consistency
- functional and operational features of equipment and hand and power tools:
 - angle grinders
 - masonry saws
 - hand tools
 - wheelbarrows
- types and safe use of stone lifting equipment
- workplace practices relating to stonemasonry
- workplace safety:
 - job safety and environmental analysis (JSEA)

- exposure to silica dust
- exposure to loud noise
- hazardous manual tasks
- processes and techniques for:
 - material protection and storage
 - stonemasonry construction work
 - locating and loading mortar boards
 - work area preparation
 - laying stone
- environmental requirements for workplace processes and waste disposal.
- key features of plans and specifications
- stonemasonry regulations, standards and codes.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST2003 Finish stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST2003A Finish stone. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to cut and finish both hard and soft stone. It includes determining stone hardness prior to cutting and finishing stone.

The unit is suitable for people with basic skills and knowledge who undertake routine stonemasonry work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read, interpret and apply finish stone requirements from current plans, specifications, standards and codes and confirm information with relevant person. |
|---------------------|---|

- 1.2 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.3 Clarify job priorities and sequence job tasks in consultation with other workers.
 - 1.4 Identify potential hazards and implement control measures.
 - 1.5 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.6 Check conformity of materials against the job requirements and place stone ready for the work.
 - 1.7 Identify stone hardness using Mohs scale of mineral hardness.
- 2 Cut stone.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Mark stone and position onto cutting table to obtain maximum efficiency in cutting.
 - 2.3 Align stone to cutting blade and secure in position to ensure stability.
 - 2.4 Adjust machinery to maximum depth of cut for size of stone.
 - 2.5 Apply coolant as required for stone and job requirements.
 - 2.6 Use primary and secondary cutting machines appropriate to their cutting capacity.
- 3 Polish stone.
- 3.1 Prepare stone with adhesives or fillers.
 - 3.2 Set up and operate polishing heads.
 - 3.3 Polish stone using various hand-operated and static polishing machines.
 - 3.4 Apply adhesives, tinting for fillers and reinforcing materials to job requirements.

- 3.5 Clean stone face surfaces and apply finishes.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST2003A Finish stone

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST2003 Finish stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST2003A Finish stone. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by cutting and polishing one hard stone and one soft stone with a minimum size of 190 mm x 190 mm x 190 mm.

In doing this, the candidate must:

- use two types of cutting equipment
- use two types of polishing equipment
- use two types of abrasives and polishing compounds.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials and products for cutting and finishing stone:
 - soft and hard stone
 - coolants used in the polishing process
 - range and grades of polishing compounds
 - adhesives and fillers
- processes and techniques for:
 - material protection and storage
 - cutting stone
- primary and secondary cutting machines
- correct sequencing of various polishing heads
- functional and operational features of equipment and hand and power tools:
 - angle grinders
 - buffs
 - circular saws
 - drills
 - edge polishers

- frame saws
- hole saws
- Jenny Lind type polishers
- line polishers
- milling machines
- rise and fall saws
- rotating or transverse tables
- stationary slab polishers
- twin tables
- wire saws
- workplace processes and procedures for stonemasonry
- workplace safety:
 - job safety and environment analysis (JSEA)
 - exposure to silica dust
 - exposure to loud noise
 - hazardous manual tasks
 - hazardous goods
 - vibration
 - chemical handling and storing
- key features of plans and specifications
- stonemasonry regulations, standards and codes
- Mohs scale of mineral hardness
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST2004 Lay stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST2004A Lay stone. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to use a variety of stones to construct stone structures, such as freestanding and garden walls, load bearing structural walls and veneer facing.

The unit is suitable for people with basic skills and knowledge who undertake routine stonemasonry work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Read and interpret lay stone requirements from current plans, specifications, standards and codes and confirm information with relevant person.

- 1.2 Source and follow relevant information from workplace safety and environmental documentation and workplace procedures.
 - 1.3 Calculate material quantities for the task using measurements and formulas.
 - 1.4 Clarify job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant personnel.
 - 1.7 Check conformity of materials against the specifications.
- 2 Prepare for work.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Identify structural, construction and finish details of wall.
 - 2.3 Set out and mark position, length and height of wall.
 - 2.4 Sort and blend stone and place in preparation to commence work.
 - 2.5 Mix mortar to colour and consistency and place on mortar board ready for use.
- 3 Lay stone.
- 3.1 Lay base stone and fix ties and reinforcing and install drainage, flashing and ties.
 - 3.2 Lay stone to a sequence and maintain face to a set line.
 - 3.3 Lay stone to height maintaining shape, consistent joint size, level and plumb.
 - 3.4 Lay wall capping and clean face of stone wall.
- 4 Fix stone slabs.
- 4.1 Prepare existing wall for stone application.
 - 4.2 Mix and apply adhesives, mortar or plaster to job

- requirements.
- 4.3 Secure stone with ties or dowels.
 - 4.4 Fix stone level, plumb with even joints.
 - 4.5 Remove excessive mortar or adhesive.
 - 4.6 Clean face of stonework.
- 5 Clean up.
- 5.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST2004A Lay stone

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST2004 Lay stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST2004A Lay stone. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing one 1.5 m long x 1.0 m high stone wall in either hard, soft or manufactured stone.

In doing this, the candidate must:

- prepare and fix slab stone on a mortar bed
- place reinforcing, ties and fixtures
- use packers, wedges, propping, shoring and forming to maintain correct joint size, plumb, level and shape
- finish stone surfaces and rake joints.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- stonemasonry regulations, standards and codes
- characteristics, applications and limitations of specified materials and products for laying stone:
 - adhesives, compounds and grout products
- types of stone:
 - basalt
 - granite
 - marble
 - sandstone
 - manufactured stone
- processes and techniques for:
 - selecting and preparing stone
 - bed stone into mortar construction
 - dry bed stone and grout construction
 - dry stone construction

- installing manufactured stone
- material protection and storage
- construction terminology relating to laying stone
- functional and operational features of plant, equipment and hand and power tools
- workplace procedures and workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust
 - exposure to excessive noise
 - hazardous manual tasks
 - hazardous materials
- key features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal
- digital technology to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST2005 Carry out load slinging of off-site materials

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST2005A Carry out load slinging of off-site materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to sling and move materials under supervision. It includes selecting and securing slings and safely moving loads.

Shifting equipment refers to equipment excluding that requiring a certificate of competency for operation as specified by state and territory licensing requirements.

This unit is suitable for people with basic skills and knowledge who undertake routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Obtain and follow work instructions and workplace safety requirements.
 - 1.2 Identify potential hazards and implement control measures.
 - 1.3 Erect signage and barricades to create an exclusion zone.
 - 1.4 Select tools for the task and check tool for serviceability and faults.
 - 1.5 Calculate material weight to comply with safe working limits of slings and lifting equipment.
 - 1.6 Identify and apply environmental requirements.
 - 1.7 Select and check communication equipment suitable for the task.

 - 2 Move, locate and secure load
 - 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Prepare materials for work application for load slinging.
 - 2.3 Identify and locate shifting/anchorage points and select slings, tackles and associated shifting gear appropriate for the weight and shape of the load.
 - 2.4 Inspect slings, tackles and lifting gear for wear and tear and damage and report faults to supervisor.
 - 2.5 Position and securely attach strongbacks/stiffeners.
 - 2.6 Secure packaging to protect load and connect load to lifting gear.
 - 2.7 Prepare location to receive load.
 - 2.8 Stand load vertically, if necessary, move to required location and secure in position.
 - 2.9 Remove slings from load and lifting equipment and remove packaging from material.

- 3 Clean up.
 - 3.1 Clean slinging equipment and check for and report damage.
 - 3.2 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 3.3 Complete necessary documentation.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST2005A Carry out load slinging of off-site materials

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPC CST2005 Carry out load slinging of off-site materials

Modification History

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Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPC CST2005A Carry out load slinging of off-site materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by slinging and moving three loads of different weight, size and shape under supervision.

In doing this, the candidate must:

- select correct slinging equipment for the load
- connect slinging and lifting equipment securely and safely to load
- apply safe and effective techniques to carry out movement and placement of materials
- use appropriate communication techniques to assist with moving a load.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- terminology relating to slinging and moving materials
- techniques for:
 - storing and stacking materials safely and securely
 - measuring slings and moving and placing materials
 - using basic hand signals
- types and characteristics of materials used in stonemasonry work:
 - crates of fittings
 - packs of metal sections
 - packs of pipe lengths
 - packs of sheet material

- packs of timber
- pallets of bagged material
- pre-cast concrete
- steel sections
- stone sections
- tools and equipment:
 - chain slings and hook
 - lifting beams
 - lifting clutches
 - mobile pendant operated cranes
 - nylon ropes
 - packing
 - ropes
 - shackles and eye bolts
 - spanners
 - strongbacks
- workplace safety:
 - hazardous manual tasks
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust
 - exposure to loud noise
 - hazard identification
 - overhead hazards
 - equipment safety
 - vibration
- environmental requirements for workplace processes and waste disposal
- stonemasonry regulations, standards and codes
- workplace procedures
- digital tools and devices to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST2006 Identify and use stone products

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST2006A Identify and use stone products. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to identify, select and cut suitable natural stone for both off-site and in situ installation.

This unit is suitable for people with basic skills and knowledge who undertake routine stonemasonry work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Plan and prepare. | 1.1 Read and interpret relevant information to identify and use stone products from specifications, standards and codes. |
|---------------------|--|

- 1.2 Interpret and follow relevant information from workplace safety and environmental documentation and workplace procedures.
 - 1.3 Clarify job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and implement control measures.
 - 1.5 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.6 Check conformity of materials against the job requirements.
- 2 Identify types and characteristics of stone.
- 2.1 Identify and match architectural styles, natural and manufactured stone and functions of stone products to job specifications.
 - 2.2 Identify sources of stone and manufacturing and quarrying techniques for production of natural and manufactured stone.
 - 2.3 Identify key features and patterns in stone.
 - 2.4 Identify defects in stone and the effect on their functions.
 - 2.5 Identify methods, processes and plant and tools used to manufacture stone products.
- 3 Saw stone
- 3.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 3.2 Apply manual handling techniques when positioning stone on cutting machine.
 - 3.3 Secure stone, align cuts and operate equipment and tools to saw stone.
 - 3.4 Cut stone to size and design and take measures to minimise silica dust.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle

materials following workplace and environment requirements.

- 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
- 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSST2006A Identify and use stone products

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST2006 Identify and use stone products

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST2006A Identify and use stone products. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by cutting three types of stone to different sizes and shapes.

In doing this, the candidate must:

- use three different methods to cut:
 - one igneous stone
 - one metamorphic stone
 - one sedimentary stone.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- stonemasonry regulations, standards and codes
- characteristics, applications and limitations of natural stone and products:
 - igneous stone
 - metamorphic stone
 - sedimentary stone
 - mortar ingredients and consistency
 - adhesives, compounds and grout products
- stone products:
 - basalt
 - granite
 - marble
 - pre-cast concrete
 - sandstone
 - manufactured stone
- processing and manufacture:

- crushed to aggregate size
- crushed to fine particle (dust) size
- cut and polish to tile size
- cut or finished to pavement section size
- natural stone products cut to size
- construction terminology relating to stone
- architectural styles used in stonemasonry work
- Moh scale for mineral hardness
- measuring techniques
- functional and operational features of plant, equipment and hand and power tools
- workplace procedures
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust
 - exposure to loud noise
 - hazardous manual tasks
- processes and techniques for using stone products
- environmental requirements for workplace processes and waste disposal
- features of plans and specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCS2007 Use stonemasonry tools, plant and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit specifies the skills and knowledge required to safely and effectively use stonemasonry tools, plant and equipment when assisting with stonemasonry work. It includes the introduction to and the operational and functional features of stonemasonry hand and power assisted tools, plant and equipment.

The unit is suitable for people with basic skills and knowledge who undertake routine stonemasonry work under the direction of more experienced workers on a new or existing structure on a commercial or domestic site.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Read, interpret apply hand and power tool and equipment requirements from manufacturer's operational instructions, workplace procedures and workplace safety

- requirements.
- 1.2 Identify stonemasonry project requirements from plans and work instructions.
 - 1.3 Identify potential hazards and determine and implement control measures.
 - 1.4 Select and check condition of plant, equipment and tools and report damage or faults.
 - 1.5 Clarify job priorities and sequence with others on site.
- 2 Prepare for work.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Identify and select plant, equipment and hand and power tools appropriate for the task.
 - 2.3 Identify any operation or function limitations of plant, equipment and tools.
 - 2.4 Check equipment and tools to ensure guards, guides, controls and switches are fitted and functioning.
 - 2.5 Examine hoses for damage and check electrical leads and power tools are tagged.
 - 2.6 Inspect equipment, used for holding, clamping and supporting materials prior to and during operation, for faults.
 - 2.7 Remove from service and report any damage to equipment and tools.
- 3 Use plant, equipment and tools.
- 3.1 Connect power assisted tools to a residual current device (RCD) and conduct a pre-operational check prior to use.
 - 3.2 Use plant, equipment and tools safely and effectively and only for intended purpose.
 - 3.3 Disconnect electrical and pneumatic equipment from source and place in a safe location when not in use.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST2007 Use stonemasonry tools, plant and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by using stonemasonry tools, plant and equipment during assisting on a minimum of one stonemasonry project.

In doing this, the candidate must safely set up and use:

- a cement mixer
- a static wet cut circular saw
- a portable wet cut circular saw
- an angle grinder
- an air compressor
- a laser level
- an impact power drill
- battery operated tools
- hand tools:
 - wheel barrow, hammers, mallets, chisels, pointers, spirit and water level, straight edge, trowels, shovels, line blocks, chalk line.
 -

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- functional and operational features of plant, equipment and hand and power tools:
 - battery operated tools
 - manufacturer's instructions for use
 - terminology
 - applications and limitations of use
 - parts and components
 - electrical safety, use of residual current device (RCD) and tag and test
 - maintenance, cleaning and storing

- terminology relating to stonemasonry tools and equipment
- characteristics, application and limitation of approved stonemasonry materials when used in conjunction with plant, equipment and tools
- processes and techniques for using plant, equipment and tools
- battery operated tools
- workplace procedures and workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica
 - exposures to excessive noise
 - working at heights
 - electrical hazards
- environmental requirements for workplace processes and waste disposal
- using digital tools and devices to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3001 Dress and mould stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3001A Dress and mould stone.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to dress and mould soft and hard stone.

This unit applies to stonemasons who work independently, in a team or under supervision and operate machinery relating to stone work in a workshop setting, on a new or existing structure.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Plan and prepare. | 1.1 Read and interpret dress and mould stone requirements from plans, specifications, standards and codes. |
| | 1.2 Follow requirements in workplace safety and |

- environmental documentation and workplace procedures.
- 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of plant, equipment and tools and report damage or faults to relevant personnel.
 - 1.6 Check conformity of materials against job requirement.
- 2 Mark details on stone.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Check stone for defects, natural inclusions and dimensions.
 - 2.3 Apply templates square and in wind to face of stone and mark adjacent ends.
 - 2.4 Scribe or mark pattern so that lines remain indelible for duration of job.
- 3 Dress and finish stone.
- 3.1 Check bedding plane for correct orientation and profile.
 - 3.2 Sequence profile stages for dressing fillets and chamfers.
 - 3.3 Check each stage of dressing to maintain accuracy and consistency.
 - 3.4 Use hand tools to maintain uniformity of profile.
 - 3.5 Clean and finish surface using abrasives.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following

workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3001A Dress and mould stone

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3001 Dress and mould stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3001A Dress and mould stone.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by dressing and moulding one solid hard stone and one solid soft stone.

In doing this, the candidate must:

- apply different moulding to each stone
- accurately set out templates for each mould
- finish moulded stone surface using chisels and other hand tools.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- stonemasonry regulations, codes and standards
- characteristics, applications and limitations of specified materials for dressing and moulding stone
- types of natural and manufactured stone
- processes and techniques for dressing and moulding stone:
 - calculating material quantities
- construction terminology relating to dressing and moulding stone
- functional and operational features of plant, equipment and hand and power tools:
 - pneumatic chisels
 - portable cutters and grinders
 - power grinders
- workplace processes and procedures
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust
 - exposure to loud noise
 - hazardous manual tasks

- environmental requirements for workplace processes and waste disposal
- Mohs scale of mineral hardness
- digital technology to operate devices and applications to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3002 Shape solid stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3002A Dress and mould stone.
Updated to meet the Standards for Training Packages.

Application

This unit specifies the skills and knowledge required to shape solid hard and soft stone. It includes using a range of shaping methods to meet required specifications.

This unit applies to stonemasons who work independently, in a team or under supervision and operate machinery relating to stone work in a workshop setting, on a new site or an existing structure.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---|-----|--|
| 1 | 1.1 | Read, interpret and apply requirements for shaping solid stone from specifications, standards and codes. |
|---|-----|--|

- 1.2 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant personnel.
 - 1.6 Check conformity of materials against the job requirements.
- 2
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Determine required stone dimensions and shape.
 - 2.3 Dress stone using each tool for correct application and sequence.
 - 2.4 Cut soft stone accurately to squared sizes.
 - 2.5 Shape stone using a range of hand tools when processing at different stages.
 - 2.6 Cut stone to size and shape.
 - 2.7 Dress stone surfaces using abrasive machines.
 - 2.8 Adjust machinery to stone applications and operate using jigs and guides for repetitive and fine tolerance work.
- 3
- 3.1 Conduct a pre-operation check on equipment.
 - 3.2 Operate circular diamond saw to cut square blocks and operate with rise and fall functions for cutting profiles.
 - 3.3 Shape stones on lathe both between centres and face work.
 - 3.4 Operate a core drilling machine.
 - 3.5 Shape moulded section on planer machine.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3002A Shape solid stone

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3002 Shape solid stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3002A Dress and mould stone.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by shaping one solid soft stone and one solid hard stone to specified dimensions.

In doing this, the candidate must:

- cut one stone using hand tools and power assisted hand tools
- cut one stone using a circular diamond saw.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- stonemasonry regulations, standards and codes
- characteristics, applications and limitations of specified materials for shaping solid stone
- processes and techniques for:
 - shaping solid stone
 - calculating material quantities
- terminology relating to shaping solid stone
- functional and operational features of plant, equipment and hand and power tools:
 - rotary, chain and oscillating saws
 - water-jet cutting
 - planer machine
 - computer numerical control (CNC) machine
- workplace procedures and workplace safety:
 - hierarchy of control
 - exposure to silica dust
 - hazardous manual tasks
 - exposure to loud noise
- environmental requirements for workplace processes and waste disposal
- reading and interpreting plans and sketches

- Mohs scale of mineral hardness.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3003 Spilt stone manually

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3003A Split stone manually. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to manually split stone using various methods.

This unit applies to stonemasons who work independently, in a team or under supervision and use hand tools relating to splitting stone in a workshop setting.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read, interpret and apply requirements for splitting stone manually from specifications, job requirements, standards and codes. |
|---------------------|---|

- 1.2 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of equipment and report damage or faults to appropriate person.
 - 1.6 Check conformity of materials against job requirements.
- 2 Split stone.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Identify natural features and grain of stone.
 - 2.3 Identify alternative methods for drilling and splitting stone.
 - 2.4 Drill holes and use plugs and feathers to split stone.
 - 2.5 Set out and drill holes to depth for type and size of stone.
 - 2.6 Apply guillotine principles used for splitting various thickness of slabbed stone.
 - 2.7 Split stone using natural lines of cleavage.
 - 2.8 Finish stone surfaces as required by job specification.
- 3 Clean up.
- 3.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirement.
 - 3.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 3.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3003A Spilt stone manually

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3003 Split stone manually

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3003A Split stone manually. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by manually splitting soft and hard stone.

In doing this, the candidate must:

- split a 400 mm soft stone in half
- split a 300 mm hard stone into 150 mm slabs using a plug and feather system
- split a stone into 150mm thickness using v-cut and wedging.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- types of natural and manufactured stone
 - basalt (blue stone)
 - granite
 - limestone
 - locally available stone
 - porphyry
 - sandstone
 - slate
- processes and techniques for splitting stone manually:
 - expanding grout
 - freezing
 - hydra splitting
 - plugs and feathers
 - v-cut and wedging
- terminology relating to splitting stone
- functional and operational features of plant, equipment and hand and power tools:
 - axes

- bush hammers
- chisels
- masonry drills
- patent axes poky
- sledge hammers
- splitting wedges
- workplace processes and procedures
- stonemasonry regulations, standards and codes
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust
 - hazardous manual tasks
 - exposure to loud noise
- environmental requirements for workplace processes and waste disposal
- reading and interpreting plans and sketches
- Mohs scale of mineral hardness.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3004 Dress stone manually

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3004A Dress stone manually. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to dress hard and soft stone manually.

This unit applies to stonemasons who work independently, in a team or under supervision and operate machinery relating to stone work in a workshop setting, on a new or existing structure.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Plan and prepare. | 1.1 Read, interpret and apply requirements to dress stone manually from job requirements, specifications, standards and codes. |
|---------------------|--|

- 1.2 Follow requirements in workplace safety and environmental documentation and workplace.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of equipment and report damage or faults to appropriate person.
 - 1.6 Check conformity of materials against the job requirements.
- 2 Select stone.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Check stone type, colour, natural inclusions and defects.
 - 2.3 Select stone size and mark measurements to produce final design.
- 3 Dress stone.
- 3.1 Mark out stone in a manner appropriate to specified size and at each stage of dressing.
 - 3.2 Dress rough blocks to establish an oversized stone appropriate to job specification.
 - 3.3 Dress sphere and cylindrical surfaces to job specifications.
 - 3.4 Finish, clean and brush stone surfaces using non-corrosive methods.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3004A Dress stone manually

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3004 Dress stone manually

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3004A Dress stone manually. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by square dressing the face of one 300 mm soft stone and one 300 mm hard stone using manual techniques/processes.

In doing this, the candidate must produce two different finishes selected from the following:

- chisel
- sparrow peck
- convict punch
- rock face
- boasted

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- measuring and marking techniques related to dressing stone
- types of natural and manufactured stone and their characteristics:
 - basalt (blue stone)
 - granite
 - limestone
 - locally available stone
 - porphyry
 - sandstone
 - slate
- processes and techniques for manually dressing stone:
 - axing
 - chiselling
 - drilling
 - hand sawing
 - pitching

- punching
- splitting
- terminology relating to dressing stone
- functional and operational features of plant, equipment and hand and power tools
- workplace procedures and workplace safety requirements:
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust
 - hazardous manual tasks
 - exposure to loud noise
- stonemasonry regulations, standards and codes
- Mohs scale of mineral hardness
- environmental requirements for workplace processes and waste disposal.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3006 Machine stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3006A Machine stone. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to machine stone. It includes operating static machines to carry out machining of stone.

This unit applies to stonemasons who work independently, in a team or under supervision and operate machinery relating to stone work in a workshop setting, on a new site or an existing structure.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------|---|
| 1 Plan the work. | 1.1 Source and read machine stone requirements from specification, standards and codes. |
|------------------|---|

- 1.2 Follow requirements in workplace safety and environmental documentation and workplace procedures relevant to work activity.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant personnel.
 - 1.6 Check conformity of materials against the job requirements.
- 2 Prepare machinery for use.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Check guards, guides, clamps and sliding tables are fitted correctly and are operational.
 - 2.3 Check electrical leads are tagged, and hoses and cables are not damaged
 - 2.4 Conduct a pre-operation check and test emergency shut down switch is working.
 - 2.5 Clean work area and remove any hazards.
- 3 Operate static diamond saw.
- 3.1 Locate, secure and stabilise stone on sliding table and align to blade for cutting.
 - 3.2 Adjust depth of cut to suit stone hardness and blade cutting capacity.
 - 3.3 Start saw and turn on water.
 - 3.4 Slide stone through blade at an efficient rate avoiding strain on the machine and maintaining design.
 - 3.5 Repeat process until depth of cut is achieved.
- 4 Operate a travelling
- 4.1 Locate, align and secure stone on sliding table.

- beam saw.
- 4.2 Enter setting into digital panel for width and depth of stone and limits of blade.
 - 4.3 Switch on and operate automatic machine.
- 5 Operate multi-function cutter, grinder and polisher.
- 5.1 Select, fix and secure head/plate to operating spindle.
 - 5.2 Locate and secure stone on cutting table.
 - 5.3 Set template into position for profile work, cutting, and moulding operations.
 - 5.4 Set cutting heads for initial cut and align with template as part of the operating process.
 - 5.5 Carry out machine operations to complete the process of machining stone.
- 6 Carry out grinding and polishing.
- 6.1 Select and fit grinding plate appropriate to stone surface to be cut and polished.
 - 6.2 Set up and operate machine for grinding and polishing process changing grit abrasive pads for type of stone and finish.
 - 6.3 Monitor and maintain water flow to the polishing application.
- 7 Shut down machine operations.
- 7.1 Shut down machine and remove stone.
 - 7.2 Remove, clean, check for wear and store clamps, wedges and supporting materials.
 - 7.3 Clean machine, check for wear and tear or damage.
 - 7.4 Report any malfunctions or damage to appropriate person.
- 8 Clean up.
- 8.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.

- 8.2 Clean tools and equipment, check for serviceability and report damage or faults.
- 8.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3006A Machine stone

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3006 Machine stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3006A Machine stone. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by machining one soft stone and one hard stone to a size of 190 mm x 190 mm x 190 mm.

In doing this, the candidate must:

- use a static diamond saw to cut one stone, and
- use a travelling beam saw to cut the other stone
- cut, grind and polish two sides and a face of one hard stone shape using a multi-function machine.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types of natural and manufactured stone:
 - basalt (blue stone)
 - granite
 - limestone
 - marble
 - sandstone
 - carborundum
 - diamond
- terminology relating to machining stone
- functional and operational features of plant, equipment and hand and power tools:
 - static diamond saws
 - travelling beam saws
 - multi-function cutting, grinding and polishing machines
 - battery operated tools
- workplace safety:
 - job safety and environmental analysis (JSEA)

- exposure to silica dust
- hazardous manual tasks
- exposure to loud noise
- electrical safety
- workplace processes and procedures
- stonemasonry regulations, standards and codes
- Mohs scale of mineral hardness
- environmental requirements for workplace processes and waste disposal
- key features of sketches, plans and specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3007 Turn stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3007A Turn stone. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to turn stone. It includes setting up and using machinery, turning stone and finishing surfaces.

This unit applies to stonemasons who work independently, in a team or under supervision and operate machinery relating to stone work in a workshop setting, on a new or existing structure.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Plan and prepare. | 1.1 Read and interpret turn stone requirements from specifications, standards, codes and job requirements. |
|---------------------|--|

- 1.2 Follow requirements in workplace safety and environmental documentation and workplace procedures.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of plant, equipment, tools and personal protective equipment (PPE), and report damage or faults to relevant person.
 - 1.6 Check conformity of materials against job requirements.
- 2 Construct templates.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Select template material appropriate for the task.
 - 2.3 Set out, mark design and cut to shape.
 - 2.4 Apply template throughout the roughing out and finishing process.
- 3 Operate lathe and turn stone.
- 3.1 Identify specific features and application of the lathe relevant to task requirements.
 - 3.2 Calculate machine speeds and feed rates and conduct a pre-operation check.
 - 3.3 Read job sheet and select, prepare and fit specified lathe cutting tools.
 - 3.4 Align work stock accurately ready for operation.
 - 3.5 Calculate and set roughing and finishing areas.
 - 3.6 Secure stone and check holding devices are applied during a dry run check.
 - 3.7 Perform lathe operation systematically checking contour matches template.

- 4 Finish and seal stone.
 - 4.1 Check conformity against template, turn stone and finish surface.
 - 4.2 Remove work from lathe, clean and prepare for sealant.
 - 4.3 Apply sealant and compounds to finished stone.
 - 4.4 Store chemical products safely in lock up cabinet.

- 5 Clean up.
 - 5.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3007A Turn stone

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3007 Turn stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3007A Turn stone. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by producing two different turned stone products using one hard stone and one soft stone.

In doing this, the candidate must:

- produce one parallel pattern
- produce one tapering pattern.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types and characteristics of natural and manufactured stone:
 - granite
 - limestone
 - marble
 - sandstone
- processes and techniques for turning stone:
 - boring
 - cutting
 - shaping to parallel
 - shaping to taper
 - shaping to template
- terminology relating to turning stone
- functional and operational features of plant, equipment and hand and power tools:
 - lathe
 - abrasive heads
 - abrasive sheets
 - grinders

- range of cutting chisels
- battery operated tools
- template materials:
 - aluminium sheet
 - cardboard
 - plastic sheets
 - plywood
 - zinalume sheet
- workplace processes and procedures
- workplace safety:
 - hierarchy of control
 - exposure to silica dust
 - hazardous manual tasks
- stonemasonry regulations, codes and standards
- environmental requirements for workplace processes and waste disposal
- Mohs scale of mineral hardness.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3009 Use computer-controlled static machinery to produce stone components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3009A Use computer-controlled static machinery to produce stone components. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to produce hard and soft stone components using computer-controlled machines. It includes curved and straight moulds, levels and cuts.

This unit applies to stonemasons who work independently, in a team or under supervision and operate machinery relating to stonemasonry work in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare.
 - 1.1 Read, interpret and apply static machinery requirements from work instructions, job requirements and machine operator instructions.
 - 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and implement control measures.
 - 1.5 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.6 Check conformity of materials against job requirements.
 - 2 Carry out data input.
 - 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Determine and state programming terms, methods, limits and data storage capacity consistent with job requirements.
 - 2.3 Write, enter and edit program to produce straight and circular movements, compensating for tool profiles.
 - 3 Transfer program to machine control.
 - 3.1 Identify and record methods of transferring program into machine memory.
 - 3.2 Load program into machine memory using appropriate techniques to meet machine and job requirements.
 - 4 Operate loaded program to control machine.
 - 4.1 Conduct a program dry run in simulation mode to test alarm setting and edit using control station.
 - 4.2 Take precautions to ensure production of silica dust is minimised.
 - 4.3 Produce specific work pieces using automatic mode.

- 5 Clean up.
 - 5.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3009A Use computer-controlled static machinery to produce stone components

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CCCCST3009 Use computer-controlled static machinery to produce stone components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CCCCST3009A Use computer-controlled static machinery to produce stone components. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by producing two separate stone components using a computer numerically-controlled (CNC) equipment.

In doing this, the candidate must:

- produce a curved contour in hard stone
- produce a splayed shape in soft stone
- comply with manufacturer's instruction and workplace procedures.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials to produce stone components
- types of natural and manufactured stone
- processes and techniques for producing stone components on static machinery
- terminology relating static machinery
- functional and operational features of plant, equipment and hand and power tools
 - CNC equipment
 - battery operated tools
- workplace policies and procedures and work instructions
- stonemasonry regulations, standards and codes
- Mohs scale of mineral hardness
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust

- hazardous manual tasks
- exposure to loud noise
- environmental requirements for workplace processes and waste disposal
- using digital tools and devices to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3010 Set out and cut letters in stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3010A Set out and cut letters in stone. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to set out and cut letters in stone. It includes accurately transferring and cutting types of lettering onto various stone faces.

This unit applies to stonemasons who work independently, in a team or under supervision and cut letters into hard and soft stone in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Read, interpret and apply requirements for setting out and cutting letters in stone from job requirements,

- specifications, standards and codes.
- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.6 Check conformity of materials against job requirements.
- 2 Select stone.
 - 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Select stone to ensure quality, grain, colouring and size to suit job specifications.
 - 2.3 Prepare stone surface for lettering adaptable with the type of stone.
- 3 Set out for lettering.
 - 3.1 Select fonts appropriate for cemetery monument, architectural settings and a variety of commercial settings.
 - 3.2 Use drafting skills to set out full size lettering and transfer to template or stencil.
 - 3.3 Transfer lettering to stone face using appropriate method.
- 4 Cut and form traditional and contemporary letters in stone.
 - 4.1 Cut and form raised and flush letters to set out design.
 - 4.2 Cut and form V-shaped letters to set out design.
 - 4.3 Cut and form decorative ornamental work in letters following set out design shapes.
- 5 Cut and form
 - 5.1 Develop, draft and set out innovative design and apply

innovative forms of lettering in stone.		techniques for working letters into stone.
	5.2	Transfer drafted design to stone face using appropriate method.
	5.3	Cut and form designed letter style and shape in stone.
	5.4	Clean stone finish to job requirements.
6 Clean up.	6.1	Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
	6.2	Clean tools and equipment, check for serviceability and report damage or faults.
	6.3	Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- technology skills to:
 - use digital tools and devices to source job information and communicate effectively with others.

Unit Mapping Information

Supersedes and is equivalent to CPCST3010A Set out and cut letters in stone

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3010 Set out and cut letters in stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3010A Set out and cut letters in stone.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by designing and producing a range of traditional, contemporary and innovative letters and numbers with a minimum height of 60 mm and cut them in stone.

In doing this, the candidate must:

- design, set out and transfer to a template a minimum of five contemporary and five innovative letters and numbers and cut into hard stone
- design, set out and transfer to a different type of template ten architectural letters and numbers and cut into soft stone.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- drawing and sketching techniques
- interpreting drawings and specifications
- stone surfaces for lettering:
 - dressing
 - milling or cutting
 - painting surfaces for setting out
 - polishing
 - sandblasting
- traditional, contemporary and architectural font styles used in stonemasonry
- types of materials used for templates and stencils:
 - aluminium sheet
 - cardboard
 - plastic sheet
 - plywood
 - zincaluminum sheet

- design transfer:
 - computer aided design (CAD)
 - direct drafting
 - stencils
 - templates
 - tracings
- types of natural and manufactured stone and their characteristics:
 - granite
 - marble
 - slate
 - manufactured stone
- terminology relating to setting out and cutting letters in stone
- adhesives, compounds and abrasive products
- functional and operational features of plant, equipment and hand and power tools
 - battery operated tools
- workplace policies and procedures and work instructions
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica dust
 - hazardous manual tasks
 - exposure to loud noise
- environmental requirements for workplace processes and waste disposal
- digital technology to design, set out and transfer letters and numbers using tools, devices and programs.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3011 Plan monument construction

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3011A Plan monument construction. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to prepare plans and specifications for the construction phase of monuments in cemeteries. It includes identifying and meeting customer needs and state and local legislative requirements.

This unit applies to stonemasons who work independently, in a team or under supervision to plan monument construction relating to stonemasonry work in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Identify design and legislative requirements. | 1.1 Read, interpret and apply relevant information, government legislation, standards and codes appropriate to monument construction in cemeteries. |
| | 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation. |
| | 1.3 Determine monument design and materials with customer. |
| | 1.4 Check selected materials conform to proposed design. |
| | 1.5 Select and check drawing equipment is sufficient for job design. |
| 2 Prepare plans. | 2.1 Determine job priorities, time frames and sequence job tasks in consultation with others. |
| | 2.2 Design foundation details according to soil type and monument size. |
| | 2.3 Design monument to meet the client's requirements. |
| | 2.4 Check design with client for approval. |
| 3 Finalise design and specifications for submission. | 3.1 Complete drawings applying drafting conventions and detailing joining, supporting and reinforcing requirements. |
| | 3.2 Compile specifications ensuring direct relationship with drawings and regulations. |
| | 3.3 Check drawing and specifications and edit for consistency. |
| | 3.4 Print drawings and specifications in preparation for distribution. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3011A Plan monument construction

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3011 Plan monument construction

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3011A Plan monument construction.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by designing two different stone monuments.

In doing this, the candidate must:

- collate client information to inform design
- plan structural and decorative components
- address site regulations, caveats and construction methods
- present design plan for client approval.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitation of monument materials
- types of natural and manufactured stone:
 - basalt
 - granite
 - marble
 - pre-cast concrete sections
 - reconstituted stone
- processes and techniques for monument construction:
 - headstone
 - cover stone
 - monument
 - front, side and back stone
 - foundation material
 - assembling and joining components
- features of working drawings and specifications

- terminology relating to monument construction
- masonry expansion and growth, control and articulation joints
- workplace procedures and workplace safety
- policies, procedures, work schedules relating to monument construction
- government legislation, standards and codes relating to headstone and cemetery monuments
- environmental requirements for workplace processes and waste disposal
- using digital tools and devices to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3012 Build stone veneer walls

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3012A Build stone veneer walls.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to build single leaf stone block face walls to a metal or timber wall frame construction.

This unit applies to stonemasons who work independently, in a team or under supervision to build stone veneer walls relating to stonemasonry work on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Read, interpret and apply stone veneer construction requirements from current plans, specifications,

- standards and codes.
- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Use measurements and formulas to calculate material quantities.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.7 Check conformity of materials against the job requirements.
- 2 Set out stone veneer work.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Identify structural details of stone veneer construction from plans and specifications.
 - 2.3 Establish overall height and levels from datum.
 - 2.4 Set out stonework dimensions and bond and mark on footing.
 - 2.5 Set out door and window openings, stone gauge and damp proof course (DPC).
- 3 Construct base.
- 3.1 Select, blend and place materials in preparation for the work.
 - 3.2 Mix mortar for consistency and job requirements and place on mortar boards ready for use.
 - 3.3 Lay base stonework level and plumb to set out marks.
- 4 Construct stone veneer walls
- 4.1 Check structural frame for plumb, straight and no protrusions to maintain consistent cavity size.

- 4.2 Install reflective foil to meet building code and Australian standards.
 - 4.3 Lay stone masonry work installing DPC and flashings, ventilation, weep holes and fix wall ties to framework.
 - 4.4 Construct opening and install flashings maintaining clean cavity from mortar dropping and bridging.
 - 4.5 Set out, erect, stabilise and brace work platform to workplace safety requirements.
 - 4.6 Install lintels and head flashings to openings.
 - 4.7 Finish stone veneer walls level, plumb and parallel to eaves height.
 - 4.8 Locate and form control joints and stone work reinforcing as specified.
 - 4.9 Cut and lay sill bricks to a line as specified.
- 5 Rake and rule joints.
- 5.1 Remove excess mortar from stonework.
 - 5.2 Rake or rule joints to specified profile and depth.
 - 5.3 Clean face of stonework prior to mortar drying.
- 6 Clean up
- 6.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 6.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 6.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3012A Build stone veneer walls

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3012 Build stone veneer walls

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3012A Build stone veneer walls.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by building a minimum 2.1 m long x 2.0 m high section of stone veneer wall with one external corner on a slab construction.

In doing this, the candidate must:

- build in damp proof course and ventilation
- build a door and window opening with lintel and flashings.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials for stone veneer construction
- processes and techniques for stone veneer construction:
 - vermin control and anti-termite measures
 - damp proofing, flashing and ventilation
 - floor, wall and roof members
 - frame tying components
 - lintels and load bearing components
 - timber and steel door frames
 - gable and eaves construction
- construction terminology relating to stone veneer construction
- stone expansion and growth, control and articulation joints
- mortar ingredients and consistency
- stone bond patterns and gauge
- functional and operational features of plant, equipment and hand and power tools
- workplace processes and procedures
- workplace safety:

- job safety and environmental analysis (JSEA)
- exposure to silica dust
- exposure to loud noise
- hazardous manual tasks
- work at heights
- safe use of scaffold
- types and safe use of lifting equipment
- features of working drawing and specifications
- Australian Standards and codes
- requirements of National Construction Code (NCC) relating to veneer construction
- environmental requirements for workplace processes and waste disposal
- digital technology to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3013 Carry out cemetery monument fixing

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3013A Carry out cemetery monument fixing. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to construct and fit cemetery monuments. It includes the use of granite, marble, basalt, pre-cast concrete sections and manufactured stone.

This unit applies to stonemasons who work independently, in a team or under supervision to carry out stonemasonry work relating to cemetery monument fixing in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan the work.
 - 1.1 Read, interpret and apply monument fixing requirements from current job instructions, specifications and codes.
 - 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Use measurements and apply formulas to calculate material quantities.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant personnel.
 - 1.7 Check conformity of materials against the job requirements and report inconsistencies to relevant person.
- 2 Construct footings and prepare monument stones.
 - 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Set out and excavate trench to specified dimensions.
 - 2.3 Place reinforcement, fix formwork and pour concrete footings.
 - 2.4 Set out and install monument on footing.
- 3 Position side stones.
 - 3.1 Position side stones, plumb and pack to provide a slight fall towards front stone.
 - 3.2 Check side stones are aligned, level, parallel and square.
 - 3.3 Measure, mark, cut and insert abutting dowels.
- 4 Stand front and back stones.
 - 4.1 Mix mortar, insert into side stone holes and insert dowel joints to full depth.
 - 4.2 Position back stone on timber packing in preparation to lift into place and protect side stones to prevent chipping.

- 4.3 Place mortar and lift back stone into position and pack level.
 - 4.4 Locate, raise and position front stone and pack to ensure level and plumb.
 - 4.5 Mix grout and pack joints between base and kerb stones.
 - 4.6 Remove excess grout and clean and wash kerb stones.
- 5 Fix headstone to back stone.
 - 5.1 Measure and cut dowels for joints, apply mortar or adhesive and insert dowels.
 - 5.2 Raise and lower headstone into position and finish plumb and level.
- 6 Fill centre and finish with chip top.
 - 6.1 Fill and compact centre area base to specified height.
 - 6.2 Place brick supports in each corner, cut and fix reinforcement and pour a minimum 50 mm concrete slab.
 - 6.3 Mix and spread stone screening to required finished height.
- 7 Fit cover stone and finish monument.
 - 7.1 Measure and cut dowels for joints, prepare and fill centre area and fill dowel holes with mortar and fully insert dowels into position.
 - 7.2 Shift cover stone into place on timber packing, and lower into place using wedges to finish in position.
 - 7.3 Prepare and apply pointing/grouting material to finish joints.
 - 7.4 Remove excess mortar, and clean and polish cover stone.
- 8 Clean up.
 - 8.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 8.2 Clean tools and equipment, check for serviceability and report damage or faults.

- 8.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3013A Carry out cemetery monument fixing

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3013 Carry out cemetery monument fixing

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3013A Carry out cemetery monument fixing. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by installing two different styles of cemetery monuments.

In doing this, the candidate must:

- install two different types of stone
- test and use lifting equipment
- comply with cemetery monument standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types and performance of adhesives and sealants used in stonemasonry work
- properties and performance of concrete footings
- types of natural and manufactured stone:
 - basalt
 - granite
 - marble
 - pre-cast concrete sections
 - reconstituted stone
- processes and techniques for fixing various types of cemetery monuments
- construction terminology relating to monument fixing
- types and safe use of lifting equipment
- functional and operational features of plant, equipment and hand and power tools:
 - air compressor and hoses
 - concrete mixers
 - generators
 - impact drills

- power grinders
- gin poles
- hydraulic or mechanical jacks
- shear legs
- power operated tools
- workplace processes and procedures
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica
 - exposure to excessive noise
 - hazardous manual tasks
 - hazardous substances
- features of working drawings and specifications
- digital technology and use of devices to source information and communicate with others
- environmental requirements for workplace processes and waste disposal
- relevant cemetery monument standards, codes and regulations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3014 Set and anchor stone facades

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3014A Set and anchor stone facades. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to shift, set and anchor a variety of stone facades for construction projects.

This unit applies to stonemasons who work independently or in a team to set and anchor stone facades relating to stonemasonry work on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Read, interpret and apply fixing stone facade requirements from current plans, specifications,

- standards and codes.
- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Use measurements and apply formulas to calculate material quantities for the task.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant person.
- 2 Prepare for work.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Check conformity of materials against the specifications.
 - 2.3 Set out stone facade dimensions, line and level from datum and establish base course.
 - 2.4 Prepare area of construction to receive stone components.
 - 2.5 Prepare surface and install base dowels to provide key for base course.
 - 2.6 Check stone for faults; stone components are prepared, lifting locations are undamaged, and lifting gear is attached.
- 3 Shift, erect and fix stone.
- 3.1 Erect scaffolding as required in accordance with workplace safety requirements.
 - 3.2 Select slings, clutches and lifting equipment for their correct function and inspect for wear and tear or damage.
 - 3.3 Shift and transfer stone components to fixing location at structure.
 - 3.4 Prepare base components by drilling holes for dowels and placing wedges or packers for adjustment.

- 3.5 Place and fix base course components; align and tie to stone components, and adjust and secure.
 - 3.6 Install, join and fix stone facades and corners using appropriate fixing methods.
 - 3.7 Flash, seal and caulk stone facade using recommended products.
 - 3.8 Clean joins and stone face.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3014A Set and anchor stone facades

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3014 Set and anchor stone facades

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3014A Set and anchor stone facades. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by setting and anchoring stone facades to a steel frame or concrete construction with minimum height of 1.5 m.

In doing this, the candidate must:

- prepare the base tie down system and set and anchor stone facades to specifications
- set stone facades around an opening
- fix stone facades into an internal or external corner.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials and components used in anchoring stone facades
- processes and techniques for fixing facade stone onto:
 - brick/concrete masonry walls
 - in situ, reinforced concrete
 - pre-cast reinforced concrete
 - structural steel framing
- methods of fixing stone facades:
 - S hook
 - back clamp
 - corbel plate bracket
 - dog cramp
 - fish tailed cramp
 - pin bracket
 - slotted bracket
 - turned end cramp

- construction terminology relating to anchor stone facades
- masonry expansion and growth, control and articulation joints
- types and safe use of lifting equipment
- functional and operational features of plant, equipment and hand and power tools:
 - lifting gear and equipment
 - air compressor and hoses
 - power grinders
 - impact drills
 - battery operated tools
- workplace processes and procedures
- workplace safety:
 - exposure to silica
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - working at heights
 - exposure to excessive noise
 - hazardous substances
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal
- digital technology to source information and communicate with others
- fire control and separation requirements
- key requirements of National Construction Code (NCC) relevant to stone facades.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3015 Apply gilding to stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3015A Apply gilding to stone.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to apply gilding to letters, monograms and insignias carved into stone surfaces.

This unit applies to stonemasons who work independently or in a team to apply gilding to stonework in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Read, interpret and apply gilding to stone requirements from job instructions, standards and codes.

- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of equipment and tools and report damage or faults to relevant person.
 - 1.6 Check conformity of materials against the job requirements.
- 2 Apply gilding.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Prepare stone surface and pre-cut lettering and shapes to job specifications.
 - 2.3 Mix and apply specific colour to stone surface ensuring size is contained within the lettering or shape.
 - 2.4 Determine potential shrinkage of gilding material and cut gilding accordingly.
 - 2.5 Check sized surface for stickiness and apply gilding material.
 - 2.6 Trim and remove excess gilding at edges of lettering or shape.
 - 2.7 Burnish gilding material and ensure loose particles are removed.
 - 2.8 Select and apply cleaning products and cleaning procedure to surrounding area.
- 3 Clean up
- 3.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 3.2 Clean tools and equipment, check for serviceability and report damage or faults.

- 3.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3015A Apply gilding to stone

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3015 Apply gilding to stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3015A Apply gilding to stone.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by applying gilding to stone.

In doing this, the candidate must:

- provide appropriate protection to surrounding areas of stone
- apply gilding to two detailed insignias, minimum size of 150 mm x 150 mm
- apply gilding to two emblems, minimum size of 150 mm x 150 mm
- apply gilding to five letters, minimum size of 60 mm
- use a minimum of two of the following products:
 - aluminium
 - gold
 - silver.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified gilding materials:
 - gold
 - silver
 - aluminium
 - Dutch metal
 - copper
 - variegated leaf
 - water-based size
- finishing techniques for gilding and gilding surfaces
- methods of applying gilding
- types of natural and manufactured stone

- processes and techniques for gilding using various products
- functional and operational features of equipment and tools
 - battery operated tools
- workplace procedures and workplace safety:
 - exposure to silica
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - hazardous substances
 - exposure to excessive noise
- drawing conventions and construction terminology used in plans and specifications
- environmental requirements for workplace processes and waste disposal
- digital technology to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCT3016 Build solid stonemasonry walls

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCT3016A Build solid stonemasonry walls. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to build stonemasonry solid walls. It includes installing damp proofing and flashing.

This unit applies to stonemasons who work independently or in a team to build solid stonemasonry walls on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Read, interpret and apply solid stonemasonry wall construction requirements from current plans,

- specifications, standards and codes.
- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Use measurements and formulas to calculate material quantities.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant person.
 - 1.7 Check conformity of materials against the specifications and place materials in proximity of the work.
- 2 Set out stonework.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Identify structural details, loadbearing stonework and piers for stonework construction.
 - 2.3 Establish finish heights and levels from datum and set out and mark base stonework.
 - 2.4 Set out stonework gauge and bond.
 - 2.5 Set out and mark load bearing stonework, damp proof course (DPC), flashing, ventilation, vermin proofing and ant capping.
 - 2.6 Set out door and window positions to suit gauge and bond.
- 3 Construct solid masonry walls.
- 3.1 Mix mortar to colour and consistency of job requirements.
 - 3.2 Lay base stones and construct to set out position and to level and bond.
 - 3.3 Construct sold stonemasonry walls straight, level and plumb to allowable tolerances and with required wall

- ties.
- 3.4 Install DPC, flashings, weep holes and ventilation to comply with standards and codes.
 - 3.5 Set out, erect, stabilise and brace work platform to workplace safety requirements.
 - 3.6 Construct window and door openings and install flashings.
 - 3.7 Install lintels and head flashings.
 - 3.8 Install roof tie down to meet specifications and standards.
 - 3.9 Set out, cut and lay sill bricks with specified slope and clearances.
- 4 Finish stonework.
- 4.1 Remove excess mortar prior to drying.
 - 4.2 Rake or rule joints to specified profile and depth.
 - 4.3 Bruch down and clean face stonework.
- 5 Clean up.
- 5.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3016A Build solid stonemasonry walls

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3016 Build solid stonemasonry walls

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3016A Build solid stonemasonry walls. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by building a minimum 2.1 m long and 2.0 m high solid masonry wall with a minimum of one external or internal corner.

In doing this, the candidate must:

- set out gauge and bond, window and door opening, flashing, weepholes and ventilation
- lay stones level, straight and plumb at corners
- install lintels for opening maintaining gauge and bond.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials for building solid masonry walls
- types of natural and manufactured stone used in wall construction:
 - limestone
 - sandstone
 - artificial stone
 - autoclaved aerated concrete (AAC)
- processes and techniques for building stonemasonry walls:
 - subfloor, wall and roof construction
 - damp proofing, flashing and ventilation
 - tying components
 - lintels and load bearing components
 - gable and eaves construction
- construction terminology relating to laying stone
- mortar ingredients and consistency
- stone bond patterns
- types and safe use of lifting equipment

- functional and operational features of plant, equipment and hand and power tools:
 - cement mixer
 - elevated work platforms (EWP)
 - power drills
 - air compressor and hoses
 - battery operated tools
- workplace processes and procedures
- workplace safety:
 - exposure to silica
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - working at heights
 - exposure to loud noise
- working drawings and specifications
- material protection and storage
- environmental requirements for workplace processes and waste disposal
- sustainability principles
- construction standards, codes and regulations
- key requirements of the National Construction Code (NCC) relevant to solid masonry walls
- digital technology to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3017 Construct stone arches

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3017A Construct stone arches.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to build different types of stonemasonry arches using regular and irregular stone.

This unit applies to stonemasons who work independently or in a team to construct arches on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Read, interpret and apply stone arch construction requirements from current plans, specifications,

- standards and codes.
- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Calculate material quantities required for the task.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.7 Check conformity of materials against the specifications and place materials in preparation for the work.
- 2 Set out arch.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Measure width and height of arch and transfer dimensions to arch support material.
 - 2.3 Mark striking point and create arch.
 - 2.4 Cut and assemble arch support allowing for ease of release on completion without jarring stonework.
 - 2.5 Mark central keystone and voussoirs onto arch support.
 - 2.6 Set out base, bond and gauge of stone arch.
- 3 Construct arch with regularly cut stone.
- 3.1 Mix mortar to colour and consistency to meet job requirements.
 - 3.2 Construct arch columns level and plumb and maintain gauge to springing line of arch.
 - 3.3 Raise arch support and brace level across springing line and crown.
 - 3.4 Cut keystone and voussoirs to pattern with even joints.
 - 3.5 Lay stones with even joints maintaining bond and

- alignment with stone face.
- 3.6 Rake joints to specified style and depth.
- 4 Construct arch with irregular stones.
- 4.1 Set out and mark keystone to crown of arch.
- 4.2 Construct arch using random rubble or random squared ashlar to match curved extrados.
- 4.3 Match stones to abutting stones and lay selected stones using mortar joints maintaining alignment and plumb.
- 4.4 Remove excess mortar, finish joints to specified profile and depth.
- 4.5 Clean and brush stone face work.
- 5 Construct an arch with irregular voussoirs forming stepped extrados.
- 5.1 Check delivered pre-cut voussoirs/wedges for conformity to design and order.
- 5.2 Position keystone of archway centrally and lay voussoirs around centre to form arch.
- 5.3 Lay regular stones where voussoirs are designed to correspond with courses.
- 5.4 Lay random regular stones where voussoirs are not designed to correspond with courses.
- 6 Clean up.
- 6.1 Clear the work area, and dispose of, reuse or recycle following workplace and environmental requirements.
- 6.2 Clean tools and equipment, check for serviceability and report damage or faults.
- 6.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Candidates require:

- numeracy skills to:
 - use measurements and geometry to accurately set curves of arches
 - use measurements and formulas to calculate material quantities.

Unit Mapping Information

Supersedes and is equivalent to CPCST3017A Construct stone arches

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3017 Construct stone arches

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3017A Construct stone arches.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by building two different types of stone arches using regular stone for one and irregular stone for the other.

In doing this, the candidate must:

- set out and assemble arch support
- cut regular keystone and voussoirs with even joints
- remove arch support without damage to stonework.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, application and limitations of specified materials used for building stone arches
- methods and techniques for constructing stonemasonry arches
- arch design:
 - regular gauge
 - random regular
 - random rubble
- types of natural and manufactured stone
- processes and techniques for building various types of stone arches
- construction terminology relating to stone arches
- mortar ingredients and consistency
- types and safe use of lifting equipment
- functional and operational features of plant, equipment and tools:
 - wet cut saws
 - angle grinders
 - cement mixers

- power saws
- battery operated tools
- workplace processes and procedures
- workplace safety:
 - exposure to silica
 - exposure to excessive noise
 - working at heights
 - hazardous manual tasks
 - job safety and environmental analysis (JSEA)
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal
- Australian Standards and codes
- key requirements of National Construction Code (NCC) relating to stone arch construction
- digital technology and use of devices to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3018 Inlay lead to stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3018A Inlay lead to stone. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to inlay lead to letters or shapes carved into stone.

This unit applies to stonemasons who work independently or in a team to inlay lead relating to stonemasonry work in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.	1.1 Read, interpret and apply lead inlaying requirements from work instructions, job requirements, standards and
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- codes.
- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.4 Identify potential hazards and determine and implement control measures.
 - 1.5 Select and check condition of equipment and tools and report damage or faults to relevant person.
- 2 Perform lead inlay to lettering
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Prepare base of lettering to key lead.
 - 2.3 Handle and prepare lead safely and work in a well-ventilated area.
 - 2.4 Cut lead strips to suit incised letters or shapes and press into position.
 - 2.5 Beat lead strips into carved letters or shapes without damage to stone face.
 - 2.6 Rasp and rub lead to an even flat or raised finish with clean edges.
 - 2.7 Finish and polish lead inlay using fine abrasive products.
- 3 Clean up.
- 3.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 3.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 3.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3018A Inlay lead to stone

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3018 Inlay lead to stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3018A Inlay lead to stone. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by inlaying lead into stone.

In doing this, the candidate must inlay lead into:

- one logo or insignia with a minimum size of 150 mm x 150 mm
- a minimum of five letters or numbers with a minimum size of 60 mm.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials for inlaying lead to stone
- types of natural and manufactured stone
- processes and techniques for inlaying lead
- functional and operational features of equipment and tools used for inlaying lead:
 - gelatine
 - masonry drills
 - pneumatic lettering chisels
 - power grinders
 - battery operated tools
- workplace policies and procedures
- workplace safety:
 - effects of lead on humans
 - exposure to lead products
 - safety data sheet (SDS)
 - respiratory protective devices
 - job safety and environmental analysis (JSEA)
 - exposure to silica
 - hazardous substances

- exposure to excessive noise
- environmental requirements for workplace processes and waste disposal
- Australian Standards and codes for stonemasonry and handling lead
- digital technologies to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3019 Lay stonemasonry stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3019A Lay stonemasonry stairs.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to lay internal or external masonry stairs. It includes calculating total rise and going of flight and riser and tread sizes.

This unit applies to stonemasons who work independently or in a team to lay stonemasonry stairs on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Read, interpret and apply stonemasonry stair construction requirements from current plans,

- specifications and codes.
- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Use measurements and formulas to calculate material quantities.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or malfunction to relevant person.
- 2 Set out stairs.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Set out location of stairs on a prepared footing to comply with plans and specifications.
 - 2.3 Calculate and set out the total rise and going of the flight of stairs.
 - 2.4 Calculate and set out minimum tread width and maximum riser height.
 - 2.5 Select and check colour, shape and conformity of stone against the specifications and place materials in preparation for the work.
- 3 Lay stonemasonry stairs.
- 3.1 Mix mortar to colour, texture and consistency for job requirements and place on mortar board ready for use.
 - 3.2 Determine starting point and lay base stones level, square and aligned to set out marks.
 - 3.3 Lay risers and treads maintaining level consistent joints.
 - 3.4 Form steps ensuring they are square, level, plumb and true.
 - 3.5 Finish joints to specified profile.

- 3.6 Remove excess mortar and brush down face of stairs prior to mortar drying.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3019A Lay stonemasonry stairs

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3019 Lay stonemasonry stairs

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3019A Lay stonemasonry stairs.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by constructing a single flight of stonemasonry stairs.

In doing this, the candidate must:

- build in three treads with a fall to run off water
- build in one wing wall maintaining gauge and bond
- lay stonemasonry stairs within tolerances stated in relevant standards and codes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- construction terminology relating to stonemasonry stairs:
 - geometry of stairs
 - open flight
 - straight flight
 - quarter and half space landings
 - solid treads
 - veneer face
- standards and codes for masonry stair construction
- key requirements of the National Construction Code (NCC) relevant to stonemasonry stairs
- mortar ingredients and consistency
- rising damp
- types and characteristics of stone:
 - granite
 - marble
 - slate
 - locally available stone

- functional and operational features of plant, equipment and tools
 - battery operated tools
- workplace processes and procedures
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica
 - hazardous manual tasks
 - exposure to excessive noise
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal.
- using digital tools and devices to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3020 Produce reconstituted stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3020A Produce reconstituted stone. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to produce reconstituted stone. It includes creating and using moulds, mixing and pouring selected materials and finishing selected surfaces.

This unit applies to stonemasons who work independently or in a team to produce reconstituted stone relating to stonemasonry work in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare.
 - 1.1 Read, interpret and apply reconstituted stone requirements from current job specifications, standards and codes.
 - 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Use formulas to calculate material quantities for job requirements.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 1.7 Check conformity of materials against the specifications.

- 2 Produce reconstituted stone
 - 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Prepare forms and existing moulds ready for placement of aggregate mix according to job requirements.
 - 2.3 Place forms flat and in wind, and place reinforcement as specified.
 - 2.4 Measure and mix aggregates and ingredients to the required consistency.
 - 2.5 Fill forms with mixed aggregate and consolidate mix using light vibration.
 - 2.6 Screed mix flat in line with top of forms, compact and allow to cure.
 - 2.7 Remove reconstituted stone from form manually or by mechanical means and position for grinding.
 - 2.8 Grind face of stone thoroughly to expose aggregate.
 - 2.9 Fill voids or imperfections evenly matching stone and aggregate colour.
 - 2.10 Polish surface to produce a flat and freeform blemish

finish.

- 3 Clean up
 - 3.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 3.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 3.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3020A Produce reconstituted stone

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3020 Produce reconstituted stone

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3020A Produce reconstituted stone.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by producing a minimum of a 600 mm x 600 mm reconstituted stone.

In doing this, the candidate must:

- set out forms parallel, square and in wind
- mix and apply ingredients and compact to job specifications
- remove stone without damage and polish one surface to produce a flat and freeform blemish finish

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of specified materials for producing reconstituted stone:
 - sand, cement and aggregate
 - adhesives, compounds and abrasive products
- processes and techniques for producing reconstituted stone:
 - placing, levelling and compacting materials
 - polishing and grinding
 - safe handling of materials
- types of forms and moulds used for producing reconstituted stone
- functional and operational features of plant, equipment and tools:
 - mixing and compacting equipment
 - grinding and polishing tools
 - battery operated tools
- workplace processes and procedures
- workplace safety:
 - exposure to silica

- job safety and environmental analysis (JSEA)
- hazardous manual tasks
- exposure to excessive noise
- hazardous materials
- environmental requirements for workplace processes and waste disposal
- standards and codes relating to producing reconstituted stone
- digital technology and use of devices to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSST3021 Restore stone work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSST3021A Renovate and restore stone work. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to restore stonework. It includes preparing and positioning new stone and reproducing decorative stone.

This unit applies to stonemasons who work independently or in a team to restore stone relating to stonemasonry work in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare.

1.1 Read, interpret and apply stone work renovation and restoration requirements from work instructions, current

- plans, specifications, standards and codes.
- 1.2 Follow relevant information from workplace procedures and workplace safety and environmental documentation.
 - 1.3 Calculate material and product quantities required for the task.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and determine and implement control measures.
 - 1.6 Select and check condition of plant, equipment and tools and report damage or faults to relevant personnel.
 - 1.7 Check conformity of materials against the job requirements.
- 2 Access and remove damaged stonework.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Identify location and dimension of damaged stonework from job drawings.
 - 2.3 Determine the extent of damage and scale of repair required.
 - 2.4 Cut out damaged section accurately without damage or collapse to surrounding stone.
 - 2.5 Remove and dispose of waste materials.
- 3 Prepare replacement stone.
- 3.1 Match colour and type of existing stone, seek advice if sourced stone is not compliant.
 - 3.2 Measure profile dimensions of damaged stone and make templates.
 - 3.3 Prepare replacement stone to accurately match dimensions and profile of removed stone.
- 4 Fix replacement stone.
- 4.1 Prepare stone for fixing using a slotted, doveled or

- bracket method.
- 4.2 Handle and raise stone into position for placement.
 - 4.3 Place and fix stone into exact position and bed stone using adhesive or mortar.
 - 4.4 Fill bed and perpendicular joints with mortar or sealant.
 - 4.5 Clean stonework using dry, liquid or chemical method.
- 5 Reproduce decorative carving work.
- 5.1 Make templates to match damaged decorative stone carving.
 - 5.2 Select stone to match colour and grain of existing stone.
 - 5.3 Apply and mark carving templates to stone to show bulk areas to be removed.
 - 5.4 Remove bulk areas of stone to allow for pattern marking.
 - 5.5 Reapply carving template, mark details and use appropriate methods to complete stone carving.
 - 5.6 Place, fix and bed decorative carved stone and inspect for quality of finish.
- 6 Clean up.
- 6.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 6.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 6.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3021A Renovate and restore stone work

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3021 Restore stone work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3021A Renovate and restore stone work. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by restoring stone work.

In doing this, the candidate must:

- remove and replace a minimum of two damaged stones varying in shape with a minimum size 300 mm x 300 mm x 200 mm
- reproduce one flora and one fauna decorative carving on the face of a minimum of 250 mm x 300 mm stone.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and limitations of materials used for restoring stone work
- processes and techniques for restoring stone work:
 - effective removal of damaged stone with no effect on surrounding work
 - reproducing stone face and decorative stone
 - preparing, mixing and using mortars and compounds
 - finishing and cleaning stonework
- construction terminology relating to restoring stone
- functional and operational features of plant, equipment and tools used in restoring stonework:
 - cranes
 - elevated work platforms (EWP)
 - fork lifts
 - load slinging
 - gin poles
 - compressors
 - materials hoist
 - power drills

- power grinders
- battery operated tools
- scaffolding
- workplace processes and procedures
- workplace safety:
 - exposure to silica
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - exposure to excessive noise
 - work at heights
 - operating lifting and lowering equipment
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal
- relevant regulations, standards and codes relating to restoring stone:
 - Heritage Act
 - Heritage Building Classifications
 - The Burra Charter
- digital technology to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3022 Carry out profile work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3022A Carry out profile work.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to carry out profile work on the edges of soft and hard stone using profiling machinery, equipment and tools. It includes producing templates in various materials and transferring patterns onto stone.

This unit applies to stonemasons who work independently or in a team and operate machinery relating to stonemasonry profile work in a workshop setting, on a new or existing structure.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare. 1.1 Read, interpret and apply profile work requirements from

- job and work instructions, standards and codes.
- 1.2 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.3 Select tools and equipment and check for damage and faults.
 - 1.4 Check materials comply with job requirements and place in position ready for the work.
- 2 Develop patterns.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Transfer dimension from drawing and mark on stone using established datum points for profile set out.
 - 2.3 Choose most appropriate dressing method for type of stone.
 - 2.4 Carry out calculation to develop true shape for profile mould.
 - 2.5 Set out patterns accurately for profile mould, reverse mould and bed mould to dimensions and specified shapes.
 - 2.6 Determine allowances for fabrication processes, working off template, and transfer to bed mould.
- 3 Shape and profile stone.
- 3.1 Adjust and use power cutting tools to cut patterns for templates.
 - 3.2 Cut template material to size minimising waste and trim to specifications.
 - 3.3 Set up and adjust equipment and position and secure stone into place on cutting machine table ready for operation.
 - 3.4 Set cutters and carry out initial cutting process.
 - 3.5 Change cutters during operation to align with the profiling process.
 - 3.6 Locate and align bed template with stone and machine

- operation.
- 3.7 Set up equipment allowing for thickness of template and gauges.
 - 3.8 Operate equipment and accurately shape and profile stone.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCST3022A Carry out profile work

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3022 Carry out profile work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCST3022A Carry out profile work.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by carrying out three different profile works and which include hard and soft stone.

In doing this, the candidate must:

- produce three different profiles using three different template materials
- transfer dimensions and reference points to stone
- operate machines and equipment safely to produce profile work to specifications.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- terminology relating to stone profile work
- processes and techniques for:
 - applying profile work too hard and soft stone
 - setting out profiles on various types of template materials:
 - aluminium sheet
 - cardboard
 - plastic sheet
 - plywood
 - zincalume sheet
- characteristics, applications and limitations of specified stone for profiling
- functional and operational features of plant, equipment and hand and power tools:
 - power grinders
 - portable machines
 - diamond cutters
 - travelling arm saws
 - battery operated tools

- workplace processes and procedures
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica
 - hazardous manual tasks
 - electrical hazards
 - vibration
 - exposure to excessive noise
- environmental requirements for workplace processes and waste disposal
- standards and codes relating to stonemasonry
- digital technology to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3023 Apply drawing principles to stonemasonry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to use manual drafting techniques to produce stonemasonry sketches and drawings from standards, specifications and project briefs. It includes freehand sketching to depict and communicate ideas and information using technical drawing techniques.

This unit applies to stonemasonry workers who use drawings to transfer information to assist in off-site production, onsite set out, cutting and shaping and installation of elaborate masonry elements.

It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing stonemasonry drawing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare for drawing.
 - 1.1 Identify project objectives and design from plans, specifications, standards and codes.
 - 1.2 Establish stonemasonry component shape, dimensions and key features.
 - 1.3 Determine appropriate drawing medium to suit job requirements.
 - 1.4 Select drawing equipment, instruments and materials to produce appropriate drawing.

- 2 Draft initial drawing.
 - 2.1 Hand sketch an isometric prototype to assist with designing the drawing.
 - 2.2 Apply notations to sketch.
 - 2.3 Check sketch against project objectives and specifications.
 - 2.4 Identify, rectify and clarify any non-conformities with appropriate person.

- 3 Create a technical drawing using hand drawing techniques.
 - 3.1 Select paper size according to project objectives.
 - 3.2 Set out the title block and location of plan, section, elevation and detail views.
 - 3.3 Produce a scaled orthographic drawing including measurements, symbols and abbreviations.
 - 3.4 Develop basic specifications from compiled information and drawings.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3023 Apply drawing principles to stonemasonry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by creating a freehand sketch of a standard heritage boss stone and producing a technical drawing for a 6.0 m long x 1.5 m high stone wall construction.

In doing this, the candidate must:

- apply primary and secondary lines and shade and light in creating the freehand sketch
- apply standard drawing conventions to the technical drawing and include the following:
 - scale, title block
 - plan, section and elevation views
 - dimensions lines to indicate footing size and position of wall on footing, height and length of wall and stone and joint sizes
 - ground line

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- principles and application of geometry
- drawing methods:
 - hand sketching
 - using drawing instruments
 - computer aided
- types of technical drawings:
 - orthographic
 - isometric
 - pictorial
- drafting and drawing protocols/conventions:
 - elevations or projections
 - sections

- details
- abbreviations
- commonly used symbols
- legends / keys
- lettering standards
- scale
- paper size
- International System of Units (SI)
- stonemasonry and heritage terminology:
 - pediments, volutes, entablatures
 - crockets, finials, boss stones
 - return corners
 - ornamental stone components
- characteristics, applications and limitations of stonemasonry materials
- workplace processes and procedures
- workplace safety
- heritage principles relating to the Burra Charter
- digital technology to operate devices and applications to source information and communicate with others.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3024 Apply conservation principles and practices to heritage stonework

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit specifies the skills and knowledge required to undertake conservation work to historic stone buildings and structures, as well as cemetery and other monuments.

This unit applies to stonemasons who work independently or in a team during conservation work relating to heritage stonemasonry work.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Read, interpret and apply heritage stonemasonry work requirements from work instructions, plans,

- specifications, standards and codes.
- 1.2 Clarify and confirm specific conservation work details in consultation with architects, supervisors and other relevant persons.
 - 1.3 Follow relevant information from workplace procedures, workplace safety and environmental documentation.
 - 1.4 Calculate material quantities for the task.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others on site.
- 2 Prepare for work.
- 2.1 Identify specified conservation procedures and their application to different parts of the building.
 - 2.2 Evaluate the physical condition and heritage significance of masonry materials and identify the required treatment for same masonry materials in different parts of the building.
 - 2.3 Select and check condition of appropriate plant, equipment and tools and report damage or faults to relevant person.
 - 2.4 Check conformity of materials against job requirements.
 - 2.5 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
- 3 Carry out conservation work to heritage stone.
- 3.1 Set out section of building for conservation work following work instructions and job requirements.
 - 3.2 Protect surrounding stonework from damage.
 - 3.3 Prepare and record samples of work for approval.
 - 3.4 Clean stone surface, apply surface treatment and repair stone using mortar.
- 4 Carry out re-pointing.
- 4.1 Sieve and blend recommended aggregates and sands to produce acceptable material.

- 4.2 Check materials, binders and mixing methods appropriate for conservation work.
 - 4.3 Prepare samples for approval by supervisor.
 - 4.4 Rake out and prepare joints as specified.
 - 4.5 Mix mortar using approved materials and mixing method.
 - 4.6 Protect existing and new work from mortar stains and pre-wet masonry to control suction.
 - 4.7 Place and pack mortar into joints and finish joint to specified profile and depth.
 - 4.8 Apply curing method appropriate for the work.
- 5 Clean up.
- 5.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3024 Apply conservation principles and practices to heritage stonework

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by applying conservation methods to heritage stonework.

In doing this, the candidate must:

- clean a minimum of min 500 mm x 500 mm stone area
- apply a minimum of two surface treatments to the stone area
- carry out mortar repair to a minimum area of 100 mm x 200 mm on ashlar stone
- carry out mortar repair to a minimum area of 100 mm x 200 mm on to a moulded profile
- repoint a minimum of 1.5 m straight joints and a minimum 300 mm of moulded joints.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- heritage significance as stated in:
 - The Burra Charter
 - Heritage Act
 - Heritage Building Classifications
- fundamentals and importance of conservation:
 - role of independent testing authorities relating to materials and treatments
 - importance and purpose of working under the supervision of heritage experts
 - difference between traditional stone restoration and the preservation of existing materials
 - the effects of conservation materials and procedures on surrounding materials
 - assessment and remedial work applied on a case to case basis
- characteristics, application and limitations of stone conservation materials and components:
 - mortar constituents, binders, aggregates, pigments, additives
 - mortar consistency

- surface cleaners and treatments
- materials used in crack repair
- stone consolidants
- processes and techniques for heritage work
- principles of stone conservation:
 - maintenance
 - restoration
 - reconstruction
 - repair
 - adaption
 - preservation
 - cleaning
- physics of materials in conservation work
- functional and operational features of plant, equipment and hand and power tools;
 - micro-abrasive cleaning
 - laser cleaning
 - steam cleaning
 - battery operated tools
- workplace processes and procedures
- workplace safety:
 - exposure to silica
 - job safety and environmental analysis (JSEA)
 - hazardous manual tasks
 - working at heights
 - dust and dust suppression
 - exposure to excessive noise
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal
- sustainability principles
- digital technology to source information and communicate with others
- key requirements of the National Construction Code (NCC) relevant to heritage stonework
- Australian standards and codes.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST3025 Carry out basic stonemasonry demolition

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit specifies the skills and knowledge required to demolish or dismantle sections of existing stonework in structures for renovations, additions or extensions. It includes removal of stone and components in the monumental and heritage sectors of stonemasonry.

This unit applies to stonemasons who work independently or in a team to carry out basic demolition relating to stonemasonry work.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Read, interpret and apply basic stonemasonry demolition requirements from demolition plans, work instructions,

- standards and codes.
- 1.2 Follow relevant information from workplace procedures and workplace safety and environmental documentation.
 - 1.3 Identify construction type and internal and external load bearing structures.
 - 1.4 Identify connected and disconnected services and confirm with appropriate person.
 - 1.5 Identify potential hazards, including hazardous materials, and determine and implement control measures.
 - 1.6 Determine job priorities and sequence job tasks in consultation with others on site.
- 2 Prepare for work.
- 2.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job.
 - 2.2 Determine method of demolition or dismantling.
 - 2.3 Select and check condition of plant, equipment and tools and report damage or faults to relevant person.
 - 2.4 Erect exclusion zones and signage.
 - 2.5 Erect and stabilise work platform following workplace procedures and workplace safety.
- 3 Remove components.
- 3.1 Set out section for demolition or mark components for individual removal following work instructions.
 - 3.2 Remove components sequentially and maintain structural stability.
 - 3.3 Demolish set out section without damage to surrounding components.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and

report damage or faults.

- 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST3025 Carry out basic stonemasonry demolition

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by demolishing a stone wall with the intent to reuse the wall materials.

In doing this, the candidate must:

- dismantle a stone wall, minimum of 1.5 m long x 1.0 m high.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types of natural and manufactured stone used in stone construction
- construction terminology relating to stonemasonry demolition
- processes and techniques for:
 - dismantling and demolishing load bearing and non-loadbearing stone construction
 - removing fixtures and fittings
 - demolishing a ceiling
 - manual and mechanical demolition
 - dismantling a headstone, socket and kerbing from a monument
- structural integrity and load bearing forces
- functional and operational features of plant and equipment, and hand and power tools
- workplace processes and procedures
- environmental and waste management requirements
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - exposure to silica
 - hazardous manual tasks
 - working at heights
 - dust and dust suppression
 - exclusion zones

- exposure to loud noise
- relevant government demolition regulations
- standards and codes relating to demolition
- features of working drawings and specifications
- environmental requirements for workplace processes and waste disposal
- principles and procedures to conserve Australian heritage places according to the Burra Charter
- digital technology and use of devices to source information and communicate with others
- key requirements of the National Construction Code (NCC) relevant to load bearing structures during demolition.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST4001 Prepare to undertake the heritage restoration process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCBC4036A Prepare to undertake the heritage restoration process. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to undertake the preparation of heritage restoration projects by skilled and experienced tradespersons. It includes sourcing heritage information and recording job outcomes.

It applies to heritage workers who may be required to work under the supervision of a heritage professional to prepare for the heritage restoration process.

A person working at this level would be expected to take responsibility for preparing for the heritage restoration work.

It is not the intent of this unit to replicate the technical processes associated with the performance of the trade skills necessary to complete the work. The unit applies to the processes associated with the application of existing high-level trade skills in the specialist heritage restoration environment.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify conservation and workplace requirements.	1.1 Read, interpret and follow heritage restoration requirements from plans, specifications, work instructions and workplace safety documentation.
	1.2 Identify relevant heritage conservation legislation and adhere to restoration requirements from regulations, guidelines, standards and codes.
	1.3 Apply organisational policies and procedures associated with the preservation of historically significant buildings.
2 Obtain historical data.	2.1 Establish period and style of construction of the building or structure from historical data.
	2.2 Analyse and confirm construction information relating to scope of works with architects, engineers or other heritage professionals.
	2.3 Identify and record materials used for previous restoration work from historical data and verify appropriateness and availability from suppliers.
3 Prepare work area and resources.	3.1 Calculate material quantities using measurements and formulas.
	3.2 Procure materials and schedule delivery times.
	3.3 Check materials for conformity with specifications and confirm they are free of defects or damage.
	3.4 Select appropriate plant, equipment and tools for the project and check for serviceability.
	3.5 Erect, stabilise and brace work platforms, designate exclusion zones and fix signage following workplace safety requirements.
	3.6 Protect surfaces around the work area from exposure to damage during planned restoration work.
	3.7 Identify faults and problems and take necessary action to

rectify.

- | | | | |
|---|---|-----|--|
| 4 | Establish and maintain restoration records. | 4.1 | Document extent of restoration work, materials used and construction methods relating to work activities. |
| | | 4.2 | File before, during and after photographs of original structures, construction work and finishes and colour matches. |
| | | 4.3 | Organise and save documents and files following organisational procedures. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- problem solving skills to:
 - analyse non-conforming restoration methods, define key problem and produce appropriate solution
 - seek clarification of appropriate solution to meet restoration compliance
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop and save relevant documentation.
-

Unit Mapping Information

Supersedes and equivalent to CPCBC4036A Prepare to undertake the heritage restoration process.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST4001 Prepare to undertake the heritage restoration process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4036A Prepare to undertake the heritage restoration process. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing for a minimum of two heritage restoration projects.

In doing this, the candidate must:

- determine job priorities and resources, and sequence job tasks in consultation with others on site
- consult with heritage professionals to determine and document processes desired for restoration applications and finishes.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government legislation relating to heritage restoration
- heritage significance as stated in:
 - The Burra Charter
 - Heritage Act
 - Heritage Building Classifications
- construction regulations, standards and codes
- key requirements of the National Construction Code (NCC) relevant to heritage restoration
- processes and techniques of:
 - providing appropriate cover protection
 - heritage restoration work
 - gathering, documenting and filing relevant heritage information
- characteristics, applications and limitations of materials used for restoration work:
 - mortar constituents, binders, aggregates, pigments, additives
 - mortar consistency

- surface cleaners and treatments
- fixings and fasteners of the period era
- paints
- plaster mixes
- specialist materials of the relevant period e
- tiles
- functional and operational features of plant, equipment and hand and power tools
 - battery operated tools
- workplace processes and practices
- workplace safety:
 - working at heights
 - exposure to silica
 - exposure to excessive noise
 - hazardous manual tasks
- preserving the fabric of a building or structure and retarding deterioration
- digital devices, applications and software to achieve tasks outcome
- key features of plans and specifications
- relevant knowledge of characteristics and features of period architecture and period plastering associated with historic buildings
- sources of accurate historical information:
 - building trusts
 - elderly and local residents
 - historical societies
 - municipal building records
 - National Trust
 - restoration contractors

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- relevant government heritage legislation:
 - The Burra Charter
 - Heritage Act
 - Heritage Building Classifications
- current building and construction codes and standards
- National Construction Code
- construction and heritage drawings and specifications

- organisational policies and procedures and other quality documentation required to undertake the performance criteria and assessment requirements
- digital devices, applications and software to transmit and receive information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST4002 Undertake the heritage restoration process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4039A Undertake the heritage restoration process. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required by skilled and experienced tradespersons to undertake heritage restoration work.

The unit of competency applies to a range of tradespersons across disciplines who are involved in heritage restoration and conservation projects and may be required to work under the supervision of a heritage professional.

It is not the intent of this unit to replicate the technical processes associated with the performance of the trade skills necessary to complete the work. The unit applies to the processes associated with the application of existing high-level trade skills in the specialist heritage restoration environment.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Identify heritage restoration requirements.
 - 1.1 Identify and adhere to relevant heritage restoration legislation, regulations, guidelines, standards and codes.
 - 1.2 Read, interpret and follow heritage restoration requirements from plans, specifications, work instructions and workplace safety documentation.
 - 1.3 Apply organisational policies and procedures associated with the restoration of historically significant buildings.
 - 1.4 Read contract and identify conditions and obligations for heritage restoration work.
 - 1.5 Develop a work plan detailing tasks and timeframes.

- 2 Undertake restoration work.
 - 2.1 Initiate and apply the consultative processes to confirm restoration applications and finishes.
 - 2.2 Maintain ongoing consultations with heritage professionals to ensure contractual requirements are compliant and fulfilled.
 - 2.3 Implement workplace safety requirement for public and on-site worker protection.
 - 2.4 Use approved methods to protect existing surrounding surfaces from damage or deterioration during the restoration work.
 - 2.5 Perform the technical restoration work in accordance with the highest trade standards and codes.
 - 2.6 Identify problems that emerge during the heritage restoration and address and rectify issues in consultation with the project team, ensuring compliance with heritage restoration requirements.

- 3 Monitor progress of restoration work.
 - 3.1 Monitor conformance of restoration work activities against the work plan.
 - 3.2 Notify relevant person regarding problems, delays and disruptions and adjust the work plan.
 - 3.3 Record and document work undertaken, materials used and recognised technical problems, their impact on the

- works and rectification undertaken.
- 3.4 Complete heritage restoration work to meet contractual obligations and heritage standards and codes.
 - 3.5 Save work and reporting documentation and finalise contractual requirements.
- 4 Clean up.
- 4.1 Remove materials used for existing surface protection avoiding damage to surfaces
 - 4.2 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.3 Clean tools and equipment, check for serviceability and report damage or faults.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral skills to:
 - use questioning techniques to confirm and clarify information during the consultative process
- writing skills to:
 - integrate heritage information using correct terminology into records and documents for reporting
- problem solving skills to:
 - identify unfamiliar heritage restoration problems
 - redefine the problem area and produce appropriate solutions
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and equivalent to CPCBC4039A Undertake the heritage restoration process.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST4002 Undertake the heritage restoration process

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4039A Undertake the heritage restoration process. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by undertaking and completing a minimum of one heritage building or structure restoration project.

In doing this, the candidate must:

- determine restoration application and finishes in consultation with heritage professionals
- prepare a work schedule and determine work priorities with others on site
- select appropriate equipment and tools and check for serviceability and select, fit and use personal protective equipment
- preserve the fabric of the heritage building or structure
- maintain a record of heritage restoration work carried out and materials used.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government legislation relating to heritage restoration
- heritage significance as stated in:
 - The Burra Charter
 - Heritage Act
 - Heritage Building Classifications
- construction regulations, standards and codes
- relevant knowledge of characteristics and features of period architecture and period plastering associated with historic buildings
- processes and techniques of:
 - providing appropriate cover protection
 - heritage restoration work
 - gathering, documenting and filing relevant heritage information

- characteristics, applications and limitations of materials used for restoration work
- functional and operational features of plant, equipment and hand and power tools
 - battery operated tools
- workplace processes and practices
- workplace safety:
 - working at heights
 - erection of work platforms
 - exposure to silica
 - exposure to excessive noise
 - hazardous manual tasks
 - working with hazardous substances
 - hazardous manual tasks
 - erections of exclusion zones and signage
- preserving the fabric of a building or structure and retarding deterioration
- digital devices, applications and software to achieve tasks outcome
- key features of plans, specifications and drafting techniques
- compliance requirements for relevant trade skills:
 - carpentry
 - gilding
 - painting
 - plastering
 - plumbing
 - stonemasonry
 - tiling

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- relevant government heritage legislation:
 - The Burra Charter
 - Heritage Act
 - Heritage Building Classifications
- current building and construction codes and standards
- National Construction Code
- construction and heritage drawings and specifications
- organisational policies and procedures and other quality documentation required to undertake the performance criteria and assessment requirements

- digital devices, applications and software to transmit, receive and save information electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST4003 Undertake preparations for refractory work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCBC4041A Undertake preparations for refractory work. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare for the commencement of work using refractory bricks and materials. It includes preparing for the construction or repair of various fire resistant structures, including boilers, kilns and industry furnaces.

It applies to specialist and advanced tradespeople working in refractory bricklaying using quality materials as specified by engineers.

This unit is suitable for people operating with autonomy. A person working at this level would be expected to take responsibility for the preparation of refractory work.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Read, interpret and apply refractory construction

- requirements from current plans, specifications, standards and codes.
- 1.2 Obtain, interpret and follow relevant information from work health and safety (WHS), workplace procedures and environmental documentation.
 - 1.3 Use measurements and apply formulas to calculate material quantities from plans and specifications.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.5 Identify potential hazards and determine and implement control measures.
- 2 Prepare for refractory work.
- 2.1 Check quantity of delivered materials against the delivery docket and order list.
 - 2.2 Examine materials for conformity with specification, repudiate non-conforming or damaged materials and report to relevant person.
 - 2.3 Select and check serviceability of equipment and tools and set aside and report any faulty or damaged equipment.
 - 2.4 Select, fit and use personal protective equipment.
- 3 Prepare site for commencement of work.
- 3.1 Establish position of project for refractory work from plans.
 - 3.2 Load refractory materials in preparation for job commencement ensuring materials are blended from each pallet.
 - 3.3 Mix refractory mortar consistently to design requirements.
 - 3.4 Load mortar onto boards and maintain sufficient volume and flow of materials during construction.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant project schedules and documentation.

Unit Mapping Information

Supersedes and equivalent to CPCBC4041A Undertake preparations for refractory work.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST4003 Undertake preparations for refractory work

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCBC4041A Undertake preparations for refractory work. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing for a minimum of one refractory work construction project and one refractory repair project.

In doing this, the candidate must:

- ensure that all refractory materials comply with refractory standards and codes
- ensure evidence of suitability, as stated in the National Construction Code (NCC), is issued by suppliers or manufacturer.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government building and construction legislation relating to refractory work
- building and construction regulation, standards and codes
- relevant sections of National Construction Code (NCC):
 - requirements of evidence of suitability
 - fire resistance
 - fire places, chimneys and flues
- characteristics, applications and limitations of refractory materials:
 - castables
 - different types of insulation materials, including insulation boards and bricks
 - fire bricks
 - fire clay
 - stainless steel joints
 - insulation
- processes, techniques and methods of refractory brickwork
- workplace policies and procedures:
 - acquisition of materials

- key features of refractory plans and specifications:
 - signs, symbols and abbreviations
 - dimensions and scales
 - views, sections and details
- allowable tolerances for brickwork stated in standards
- workplace safety:
 - exposure to silica
 - exposure to excessive noise
 - working at height
 - hazardous manual tasks
 - working with hazardous materials
 - working platforms and scaffolding
- functional and operational features of plant, equipment and hand and power tools
- workplace procedures and environmental requirements relating to waste management
- digital devices, applications and software to achieve tasks outcome.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be undertaken in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- relevant government legislation
- current refractory codes and standards
- relevant construction drawings, site plans and specifications
- organisational policies, procedures and other quality documentation to undertake the performance criteria and evidence requirements
- digital devices, applications and software to create project schedules and documentation.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST4004 Initiate the heritage works process

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error corrected in Assessment Conditions.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4035A Initiate the heritage works process. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to undertake the essential processes prior to the conduct of heritage works, such as conservation, restoration, duplication and preservation of a building or structure of historical significance. The unit recognises the complexity of the heritage restoration process and the importance of establishing effective work relationships and communications between the range of professionals, tradespersons and stakeholders involved in the project. Establishing common understanding of the nature of the site to be restored and the tasks to be performed are critical to the effective and efficient completion of the project.

The unit of competency supports the range of technical specialists, builders, project managers and related construction industry professionals responsible for heritage restorations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Identify project, location and surrounds.
 - 1.1 Identify and record location and nature of the restoration work to be undertaken following consultations with the architect and site inspections.
 - 1.2 Note and record site access and egress for work location.
 - 1.3 Determine area to be disturbed and note surrounding areas for possible work application effects and cover protection requirements.
 - 1.4 Assess and note nature of the work for possible use of heavy or bulky equipment.
 - 1.5 Assess and record effect on public access to ensure protection of the public and the environment is undertaken.

- 2 Consult with technical specialists.
 - 2.1 Conduct consultations with the conservator, engineer or supervisor to discuss and clarify specific job requirements.
 - 2.2 Identify specific risks and areas of concern arising due to the nature of the heritage and conservation aspects of the work.
 - 2.3 Establish agreed processes and timeframes to ensure effective communications between project team members.
 - 2.4 Discuss, understand and agree on role responsibilities and requirements with project team members.

- 3 Consult with clients and stakeholders.
 - 3.1 Hold consultations with the client and other stakeholders, as appropriate, to clarify expectations regarding access to the site, performance of the work and timeframes.
 - 3.2 Consult clients and stakeholders to ensure common understanding of the historical and/or cultural significance of the heritage building under restoration.
 - 3.3 Discuss and agree on appropriate communication channels and reporting processes, as appropriate, with the client and other relevant stakeholders.

- | | | |
|---|-----|---|
| 4 Clarify the impact of contractual requirements. | 4.1 | Identify and clarify relevant contractual requirements affecting the performance of the restoration work. |
| | 4.2 | Identify relevant dispute resolution processes that are to be used if required. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- analytical skills to:
 - analyse operations and develop procedures
- communication skills to:
 - communicate with team
 - consult with technical specialists, client and other stakeholders
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - facilitate discussions
 - read and interpret:
 - documentation from a variety of sources
 - plans, specifications and drawings
- written skills to:
 - record relevant information
- organisational skills to:
 - plan for and set out work
- time management skills and prioritisation skills to:
 - enable work to be completed within agreed timeframes.

Unit Mapping Information

Supersedes and equivalent to CPCBC4035A Initiate the heritage works process.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST4004 Initiate the heritage works process

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error corrected in Assessment Conditions.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4035A Initiate the heritage works process. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by completing relevant processes and activities essential prior to the commencement of a heritage restoration project.

In doing this, the candidate must:

- conduct consultative processes associated with preservation of historic structures
- demonstrate understanding of preservation of fabric
- comply with Work Health and Safety (WHS) regulations applicable to workplace operations
- apply organisational quality procedures and processes within the context of initiating the heritage restoration process
- identify job-specific requirements and inherent risks associated with heritage restoration
- select and use appropriate processes to analyse and identify particular needs for projects
- communicate and agree on expectations and timeframes for the work to be undertaken
- apply appropriate techniques to cross-reference interlocking or overlapping operations
- demonstrate techniques to check and ensure relevant information and stages of preparation are fully covered
- carry out interactive communication with others to ensure all factual information is gathered and shared with relevant stakeholders.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian standards relevant to the work

- conservation processes, including good conservation practice arising from principles of Burra Charter
- contractual requirements:
 - materials to be used
 - performance standards
 - timeframes
- dispute resolution processes
- methods and processes relating to historic building construction, including the range and use of building materials, structure of buildings and drafting techniques:
 - heavy and bulky equipment:
 - compressors
 - cranes
 - excavators
 - mobile scaffold or working platforms
 - protection requirements:
 - environmental protection
 - protection for the public
 - site access:
 - access to structures and storage facilities or space, which may be limited
- relevant architectural knowledge, including orders of architecture and the characteristics and features of period architecture
- trade-specific techniques used in restoration work
- workplace and equipment safety requirements, including relevant statutory regulations, codes and standards.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- a restoration project that is appropriate to be able to undertake the performance requirements of the units
- appropriate documentation and data related to project.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST4005 Prepare drawings for heritage works

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Unit Sector changed. Element 2.4 added to Performance Criteria. Foundation Skills formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCBC4037A Prepare drawings for heritage works. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare drawings for heritage works associated with historic buildings and structures of cultural significance. To successfully prepare drawings requires a comprehensive understanding of architectural forms, specifically period architecture, and appropriate drafting techniques. The unit requires the ability to interpret specifications for drawings, measure and calculate dimensions accurately, and work to scale.

The unit of competency supports builders, project managers and related construction industry professionals responsible for heritage works during residential and commercial projects.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare for drawing requirements.
 - 1.1 Identify specifications for drawing from request or conservation authority requirements.
 - 1.2 Determine dimensions of the historical or significant building in accordance with appropriate methods, taking into account the type of structure, access to details and previous drawings available, if applicable.
 - 1.3 Determine method of recording feature details in accordance with nature of the feature, location and accessibility.
 - 1.4 Determine and apply method and system of recording identification, location and dimensional information in accordance with requested drawing requirements.
 - 1.5 Identify, list and use equipment and instruments in accordance with recording task requirements.
- 2 Organise information for drawing preparation.
 - 2.1 Gather information to identify and group all recorded details associated with each area or section of the building or structure.
 - 2.2 Determine size of the drawing and scale to be used in accordance with dimensions of building, structure or section.
 - 2.3 Identify and locate sketches, tracings or photographs of recorded features with other recorded information related to feature work.
 - 2.4 Identify and locate sketches, tracings or photographs of recorded features with other recorded information related to feature work.
- 3 Draw or develop orthographic description.
 - 3.1 Draw or develop block layout of views and designed spacings, where applicable, to planned layout and scale accurately to recorded or calculated dimensions.
 - 3.2 Detail orthographic description views to show visible lines of structure and elements as seen with each view to correct scale representation of recorded dimensions.
 - 3.3 Show architectural drawing conventions, symbols and hatching, on drawings in accordance with relevant

- Australian standards.
- 3.4 Produce plans of large buildings by use of grids, where applicable, to provide cross-referencing and dimensioning by coordinates.
 - 3.5 Locate dimensions and reference notations relevantly on drawings to provide full detailed descriptions as required with each view.
 - 3.6 Provide appendices and reference details of drawing with drawing in accordance with overall request.
- 4 Draw or develop sectional detailed drawings.
- 4.1 Draw or develop sectional detailed drawings to scale to show detailed structural description of relationship between elements in accordance with recorded dimensions.
 - 4.2 Show architectural hatching on drawings to represent materials, in accordance with relevant Australian standards.
 - 4.3 Locate dimensions and reference notation on drawings to provide full details of sectional description.
- 5 Develop detailed drawings of feature work.
- 5.1 Enlarge photographic recording of feature work shape and design by photocopying to provide more realistic size for analysis and reproduction.
 - 5.2 Determine gridlines in accordance with actual dimensions of the feature work shape and reproduce to enlarged photocopy.
 - 5.3 Examine enlarged photocopy closely for distortion from the photographing process and make necessary adjustments to the design.
 - 5.4 Examine tracing recordings in accordance with the whole feature or part thereof and link with other tracings or sketches to ascertain the feature shape to be reproduced.
 - 5.5 Develop design shape drawings to produce accurate design to scale with grid lines where applicable.
 - 5.6 Produce cross-sectional details accurately to scale, to provide three-dimensional information.

- 5.7 Produce dimensions, reference notation, specific location and appendices for drawings in accordance with client request or design aims.
- 6 Complete work.
- 6.1 Check drawings for accuracy, clarity of line, completeness of drawing and associated dimensions and details.
- 6.2 Make copies in accordance with original request.
- 6.3 Record production details and coded reference information.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - read and interpret:
 - documentation from a variety of sources
 - plans, specifications and drawings
- written skills to:
 - record relevant information
- numeracy skills to:
 - ability to use instruments and equipment for measuring
 - calculate measurements
- organisational skills to:
 - set out work
 - work to scale.

Unit Mapping Information

Supersedes and equivalent to CPCBC4037A Prepare drawings for heritage works.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST4005 Prepare drawings for heritage works

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Unit Sector changed. Element 2.4 added to Performance Criteria. Foundation Skills formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4037A Prepare drawings for heritage works. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by carrying out the necessary preparatory processes and developing at least two examples of each form of drawing specified, using sample or case study heritage projects for any of the buildings listed below:

- built or sculptured artefacts
- cathedrals and churches
- civic buildings
- commercial and retail buildings
- government buildings
- houses
- mansions
- out buildings
- wharves

In doing this, the candidate must:

- demonstrate application of conservation principles and consultative processes associated with preservation of historic structures
- comply with Work Health and Safety (WHS) regulations applicable to workplace operations
- apply organisational quality procedures and processes within the context of preparing drawings to conservation requirements
- apply recording and identification system for measurements, locations and details
- select and use appropriate processes, instruments and equipment to measure and record information

- use appropriate and safe techniques to obtain measurements and details
- apply accurate techniques in preparing information for related drawings
- select and use appropriate techniques to ascertain accurate analysis of featured design shapes
- apply techniques to ensure all relevant information is included in orthographic description
- select and use appropriate techniques to produce accurate, sharp and complete drawings.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian standards - AS1100.101 and AS1100.301
- conservation processes, including good conservation practice arising from principles of Burra Charter
- finishing trade applications to materials
- methods and processes relating to historic building construction, including the range and use of building materials, structure of buildings and drafting techniques:
 - drawings:
 - development:
 - computer aided drafting
 - drafting techniques
 - drawings developed in accordance with National Trust guidelines or AS1100.101 - 1992 Technical Drawing - General Principles, and AS1100.301 - 1985 Architectural Drawing.
 - orthographic descriptions:
 - front, rear and side elevations
 - plans
 - sectional elevations
 - sectional plans
 - sectioned detail drawings:
 - ceiling and roof framing construction
 - ceiling construction
 - chimney construction
 - cladding details
 - external wall construction
 - fence construction
 - footings and foundation
 - internal wall construction
 - roofing details
 - sub-floor construction
 - methods to determine dimensions:
 - accurately trace shapes or features

- calculate height by use of levelling equipment and/or trigonometry
- physically tape and measure all internal and external measurement
- scale proportion of roof, chimney and spire heights from photograph where wall height is determined
- methods of measuring
- relevant architectural knowledge, including orders of architecture and the characteristics and features of period architecture:
 - feature work:
 - decorative tiling
 - mosaic tiling
 - ornamental mouldings
 - ornamental plasterwork
 - ornamental stonework
 - types of historical or significant buildings:
 - built or sculptured artefacts
 - cathedrals and churches
 - civic buildings
 - commercial and retail buildings
 - doors
 - external features
 - fences
 - government buildings
 - houses
 - mansions
 - out buildings
 - walls
 - wharves
 - windows
- workplace and equipment safety requirements, including relevant statutory regulations, codes and standards.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- historic locations appropriate to competency range

- drafting and computer equipment
- equipment relevant to measuring processes.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST4006 Prepare report for heritage restoration work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4040A Prepare report for heritage restoration work. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to prepare and present written reports detailing conditions associated with buildings and structures of historic significance requiring restoration or preservation attention. Reports are completed for specific areas of work in accordance with individual building trade applications.

The unit of competency supports builders, project managers and related construction industry professionals responsible for heritage restorations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|--|-----|---|
| 1 | Gather information to be included in the | 1.1 | Identify details of the area of the structure and information regarding areas of fault. |
|---|--|-----|---|

- report.
- 1.2 Identify general description of the building or structure and its period of construction.
 - 1.3 Identify surrounding area and faults for inspection and investigation.
 - 1.4 Conduct assessment of unsafe conditions and identify for investigation.
- 2 Assess and outline possible means of restoring the areas of the structure.
- 2.1 Conduct and record assessment of conditions and degree of deterioration and disturbance using appropriate technical language.
 - 2.2 Assess and record possible causes for deterioration of condition and stability as guidelines for investigatory enquiries and restoration considerations.
 - 2.3 Identify and record sound construction or finish applications surrounding or adjacent to the faulted area to inform restoration processes.
 - 2.4 Identify and record relevant information regarding unsafe conditions at or around the structure.
 - 2.5 Identify and document advice regarding restoration techniques and work required based on assessment of the structure.
- 3 Document and present the report.
- 3.1 Determine method of presenting the report in a logical and sequential manner with key stakeholders and implement.
 - 3.2 Write report to provide all investigated and determined information in accordance with request and agreed format.
 - 3.3 Write report in a manner that will be readily understood by relevant stakeholders.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - read and interpret:
 - documentation from a variety of sources
 - plans, specifications and drawings
 - use and interpret non-verbal communication
 - use language and concepts appropriate to cultural differences
- numeracy skills to:
 - apply measurements and calculations
 - prepare drawings and work to scale
 - use instruments and equipment for measuring
- organisational skills to:
 - set out work
- teamwork skills and the ability to work with others to:
 - ensure coordination and cooperation between self and others in the heritage restoration.

Unit Mapping Information

Supersedes and equivalent to CPCBC4040A Prepare report for heritage restoration work.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST4006 Prepare report for heritage restoration work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4040A Prepare report for heritage restoration work. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by determining all relevant information and preparing a written report on at least three separate categories of structure areas listed within the range of variables.

In doing this, the candidate must:

- apply conservation considerations and consultative processes associated with preservation of historic structures
- demonstrate understanding of preservation of fabric
- comply with Work Health and Safety (WHS) regulations applicable to workplace operations
- apply organisational quality procedures and processes within the context of preparing reports
- apply sound identification and recording system of investigation findings
- use appropriate processes, tools and equipment to carry out investigation examinations
- apply sound and accurate techniques to prepare information for report
- select and use appropriate terminology relevant to applicable trade
- use sound techniques to ensure report is well written and accurate
- communicate interactively with others to ensure safe and effective work site operations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Building Code of Australia (BCA) and other Australian standards relevant to the nature of work and materials being used

- conservation processes, including good conservation practice arising from principles of Burra Charter
- methods and processes relating to historic building construction, including range and use of building materials, structure of buildings and drafting techniques:
 - causes of deterioration:
 - fire damage
 - storm impact from vehicles or trees and other objects
 - water damage
 - general description of building or structure:
 - building description:
 - address of the structure
 - description of the area surrounding structure where influential to the fault
 - references to north and south identified and recorded in relationship to the sides of the structure
 - type and condition of materials used in structure, including details of any missing materials
 - type of structural construction building types:
 - cathedrals and churches
 - civic buildings
 - commercial and retail buildings
 - fences
 - government buildings
 - houses
 - mansions
 - out buildings
 - walls
 - wharves
 - identification of areas of fault:
 - location of fault, internal or external to the building or structure
 - nature and extent of the fault or deterioration, identified in technical terms relevant to the respective trade work required
 - number of separate faults
 - inspection and investigation equipment:
 - boots
 - gloves
 - hand tools
 - hard hat
 - inspection investigations ladders
 - jacket
 - masks and respirators
 - safety glasses

- spirit levels
 - straight edges
 - torches
 - trestles and planks
- relevant architectural knowledge, including orders of architecture and characteristics and features of period architecture
 - workplace and equipment safety requirements, including relevant statutory regulations, codes and standards.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- historic work locations appropriate to area of work
- appropriate documentation and data related to investigations
- ladder and/or scaffolding equipment
- plant, tools and equipment relevant to investigation processes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCST4007 Construct a fire brick wall and arch using refractory materials

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Elements and Performance Criteria 1.1 rewritten for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4042A Construct a fire brick wall and arch using refractory materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to construct a brick wall and arch using refractory materials, including castables, bricks and insulation. It covers the application of the unique skills and knowledge relevant to refractory work.

The unit of competency supports specialist and advanced tradespersons working in refractory bricklaying. It may be applied in the construction or repair of various fire resistant structures, including boilers, kilns and industrial furnaces.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Stonemasonry

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Set out and prepare the 1.1 Set out location of the brickwork to position in

- | | | |
|---|-----|--|
| base location of work. | | accordance with job specifications and drawings. |
| | 1.2 | Prepare base location so that the surface is dry, horizontal, clean and flat, and in accordance with job specifications. |
| 2 Lay brickwork. | 2.1 | Apply fire clay to bricks to maintain joints at the specified thickness. |
| | 2.2 | Ensure bricks are in the required bond and set out, method and line, level and plumb in accordance with job specifications and drawings. |
| | 2.3 | Cut bricks to the correct length to maintain the required bond in accordance with manufacturer recommendations and job specifications. |
| | 2.4 | Complete brickwork and remove surplus fire clay to specification requirements. |
| 3 Form a segmental arch. | 3.1 | Identify span and rise of the arch and locate in accordance with job plans and specifications. |
| | 3.2 | Place adjustable props appropriately to support the timber arch centre and adjust as necessary. |
| | 3.3 | Establish and mark position of the central key brick for easy identification. |
| 4 Cut and lay bricks to position around the arch. | 4.1 | Cut and lay bricks on the centre to form an arch to specifications. |
| | 4.2 | Maintain same sized wedge shape brick throughout the construction of the arch. |
| | 4.3 | Monitor and adjust measurements and placement of bricks accordingly to ensure accurate application of job requirements. |
| 5 Complete and review finished work. | 5.1 | Remove props and other support materials. |
| | 5.2 | Finish and clean construction to meet job requirements |

and professional expectations.

- 5.3 Clean intrados of the arch and repoint with mortar as necessary.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - communicate technical issues
 - communicate with the team
 - consult with architect and stakeholder
 - read and interpret:
 - documentation from a variety of sources
 - plans, specifications and drawings
 - use and interpret non-verbal communication
 - use language and concepts appropriate to cultural differences
- numeracy skills to:
 - apply measurements and calculations
- organisational skills to:
 - plan for and set out work
- teamwork skills and the ability to work with others to:
 - ensure coordination and cooperation between self and others

Unit Mapping Information

Supersedes and equivalent to CPCBC4042A Construct a fire brick wall and arch using refractory materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCST4007 Construct a fire brick wall and arch using refractory materials

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Elements and Performance Criteria 1.1 rewritten for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCBC4042A Construct a fire brick wall and arch using refractory materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by constructing a fire brick wall and arch. This work may include a 230mm fire brick wall to incorporate an opening (600mm x 600mm) with a segmental arch above, a minimum of 1.5m long and 1.2m high to the top of the arch.

In doing this, the candidate must:

- demonstrate understanding of the purpose and application of refractory bricklaying
- comply with Work Health and Safety (WHS) regulations applicable to workplace operations
- use safe and effective procedures to handle hazardous materials
- read and interpret two-dimensional refractory plans and specifications
- select and use processes, tools and equipment appropriate to the job requirements
- prepare materials and samples in accordance with job requirements
- identify typical faults and problems with materials and equipment that occur and take necessary action to rectify
- communicate effectively with others to ensure safe work site operations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Building Code of Australia (BCA) and other Australian standards relevant to the nature of work and materials being used
- characteristics and applications of different materials used in refractory brick work:
 - required bond:

- header bond
- stretch bond
- adjustable props:
 - metal props
 - packers
 - timber toms
 - timber wedges
- wedge shape bricks include the following common sizes:
 - 51mm
 - 63mm
 - 69mm
- methods and processes relating to the use of refractory bricks and insulation materials for the construction of fire resistant structures:
 - measurements and placements:
 - accurate positioning and maintenance of the centreline of the key brick is through the vertical centre line of the arch ensuring:
 - all bricks are cut and laid to maintain even joints
 - even joint thickness around the extrados
- organisational procedures for the acquisition and storage of materials
- workplace and equipment safety requirements, including relevant statutory regulations, codes and standards.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- materials appropriate to refractory brickwork
- plant, tools and equipment relevant to refractory brickwork.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSV5009 Assess the impact of fire on building materials

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to the Application.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCSV5009A Assess the impact of fire on building materials.

Application

This unit of competency specifies the outcomes required to assess the impact of fire on building materials.

It includes the research, analysis and reporting of testing conducted on a range of building materials and structures in differing circumstances to determine combustion, flammability, heat transfer, burning conditions, building material behaviour, fire loads of buildings and fire resistance.

The unit of competency supports the attainment of the understanding and skills to assess the impact of fire on building materials within the context of relevant legislation, the National Construction Code of Australia (NCC) and Australian standards.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|--|-----|--|
| 1 Research combustion process as it relates to different materials. | 1.1 | Identify and record processes and flame characteristics of combustion of solids, liquids and gases from a research and analysis process. |
| | 1.2 | Identify and record factors contributing to combustion. |
| | 1.3 | Research and record endothermic and exothermic processes. |
| | 1.4 | Calculate heat of combustion fuels without error. |
| | 1.5 | Analyse and record factors contributing to propagating flame front. |
| 2 Analyse flammability of matter in different states. | 2.1 | Analyse and record flammability in terms of fire triangle and fire tetrahedron theories. |
| | 2.2 | Examine and record flammability of matter in physical states. |
| | 2.3 | Identify and record flammability in terms of upper and lower flammability limits. |
| | 2.4 | Identify and record factors contributing to the explosiveness of dusts. |
| 3 Identify conditions of burning at the fire point. | 3.1 | Interpret limiting adiabatic flame temperature (LAFT) values accurately. |
| | 3.2 | Analyse and record process of extinguishment related to the combustion process. |
| 4 Record mechanisms of heat transfer during fire growth, development and spread. | 4.1 | Identify and record heat transfer factors in fire situations. |
| | 4.2 | Analyse and record processes of self-induced heating. |
| | 4.3 | Observe and record behaviour of fires in partially and fully enclosed compartments. |
| | 4.4 | Calculate amount of smoke produced from a fire. |
| 5 Record the behaviour | 5.1 | Evaluate building materials for fire safety and fire |

of building materials subjected to extreme levels of heat.		resistance levels and record findings.
	5.2	Identify and record effect of fire on structural and non-structural elements.
	5.3	Identify and record effect of fire on plastic and textile materials.
6 Devise the fire load of a building and describe the effect on the BCA classification and compartmentation.	6.1	Calculate effect of building occupancy on potential fire load.
	6.2	Research and record factors that may increase the severity of a fire.
	6.3	Research and record fire load, fire severity and general burning behaviour of materials.
7 Report the requirements of fire resistance of building elements and forms of construction.	7.1	Research and record fire resistance levels of building elements and forms of construction.
	7.2	Apply early fire hazard indices to the BCA requirements.
	7.3	Research and record Australian standards relating to fire testing of building materials and forms of construction.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSV5009A Assess the impact of fire on building materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSV5009 Assess the impact of fire on building materials

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to the Application.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCSV5009A Assess the impact of fire on building materials.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- performing fire research, analysis, identification and reporting of findings for at least one fire assessment or equivalent, including at least three different materials
- assessing applicable fire safe suitable building materials for at least one building project
- providing reports to appropriate body/individual as determined by the project brief.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics of endothermic and exothermic processes
- effects of fire on structural and non-structural elements:
 - behaviour of building materials subject to extreme heat
 - combustion of materials
 - fire loads of buildings
 - fire resistance of materials
 - flammability circumstances
 - heat transfer characteristics
 - point of fire burning conditions
- extinguishment principles
- limiting adiabatic flame temperature (LAFT) values
- materials:
 - timber
 - plastic

- fabric
- other types of fire load forming building materials
- principles of combustion and flammability
- processes for the preparation of documentation
- relevant federal, state or territory legislation and local government policy and procedures
- research methods:
 - definitions and test outcomes
 - material safety data sheets (MSDS)
 - reports
 - written records and historical data.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCVE1002 Undertake a basic computer design project

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCVE1002B Undertake a basic computer design project. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to use a computer drawing program to prepare drawings for a basic construction project from a design brief.

The unit includes production of the drawings in plan and elevation format.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---|-----|---|
| 1 | Review and prepare for computer design. | 1.1 | Review design brief for a basic construction project. |
| | | 1.2 | Access computer and drawing program. |

- | | |
|-------------------------------|--|
| 2 Prepare first draft design. | 2.1 Progressively enter design parameters and other information for the proposed structure into the computer software. |
| | 2.2 Modify design information in the system as anomalies and errors become apparent. |
| | 2.3 Complete first draft design. |
| 3 Finalise design. | 3.1 Review first draft design for accuracy and compliance with brief. |
| | 3.2 Finalise drawings in both plan and elevation form. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCV1002B Undertake a basic computer design project

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CCCCVE1002 Undertake a basic computer design project

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CCCCVE1002B Undertake a basic computer design project. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by using a computer drawing program to prepare drawings from a design brief for a basic construction project, such as a simple piece of furniture.

All work must be performed to the standard required in the workplace and meet the design brief.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace quality policies and standards for basic computer design projects
- processes for using hardware and software systems for basic computer design projects
- features of plans and elevations
- techniques for reading and interpreting briefs for simple structures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCVE1011 Undertake a basic construction project

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCVE1011A Undertake a basic construction project. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to undertake a basic construction project using basic tools, equipment and materials.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---|-----|---|
| 1 | Review and prepare to undertake basic construction project. | 1.1 | Review plans and specifications to undertake a basic construction project. |
| | | 1.2 | Prepare all work to comply with laws and regulations, national construction codes, Australian Standards, work |

- health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
- 1.3 Select and use personal protective equipment (PPE) for each part of the task.
 - 1.4 Select tools and equipment, check for serviceability and report any faults.
 - 1.5 Determine project components from plans and specifications, prepare component list and calculate quantities of materials.
- 2 Manufacture components for basic construction project.
 - 2.1 Select processes to manufacture components.
 - 2.2 Manufacture components and check for accuracy, quality and suitability.
- 3 Assemble project components.
 - 3.1 Select assembly process.
 - 3.2 Set out, level and erect/install project in line, level and plumb.
 - 3.3 Assemble components to specification and quality, and check for conformity to plans and specifications.
- 4 Clean up.
 - 4.1 Clean up, meeting all legislative and workplace requirements for safety, waste disposal and materials handling.
 - 4.2 Check, maintain, store and secure tools and equipment and report any faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCV1011A Undertake a basic construction project.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCE1011 Undertake a basic construction project

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCE1011A Undertake a basic construction project. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all the elements, performance criteria and foundation skills of this unit by undertaking a basic construction project, following plans and specifications, for a simple structure such as a deck, pergola or shed.

All work must be performed to the standard required in the workplace and must comply with work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, plans and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards relevant to basic construction projects
- workplace quality policies and standards for basic construction projects
- safety requirements for basic construction projects, including job safety analyses/safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state/territory equivalent, and personal protective equipment (PPE)
- types and uses of tools and equipment used for basic construction projects
- plans and specifications for basic construction projects
- processes for:
 - preparing a component list for a basic construction project
 - calculating material requirements for basic construction projects
 - manufacturing components for basic construction projects
 - assembling components for basic construction project
- plumb, line and level for basic construction projects.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed while undertaking workplace tasks:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWC2001 Complete penetrations and flashings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWC2001A Complete penetrations and flashings. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to complete the penetrations and flashings associated with wall and ceiling lining, meeting all relevant requirements of Australian Standards, work health and safety (WHS) requirements, and Commonwealth and state or territory legislation. It does not cover the technical aspects of passive fire systems.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Wall and ceiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
|---------------------|---|

- 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Follow requirements of job safety analyses and safety data sheets.
 - 1.5 Inspect work site, locate services, assess hazards and apply risk controls, including required signage and barricades.
 - 1.6 Select tools and equipment, check for serviceability and report any faults.
- 2 Confirm penetration and flashing requirements.
- 2.1 Select type of penetration and flashing to match host materials and meet work instructions.
 - 2.2 Identify, set out and check penetration location in accordance with workplace requirements.
- 3 Complete penetration and flashing.
- 3.1 Create penetration safely and with minimal modification or damage to host materials.
 - 3.2 Install flashing safely and with minimal modification or damage to host materials.
 - 3.3 Install and connect casings, housings or other terminating points in accordance with workplace and regulatory requirements.
 - 3.4 Apply sealant or caulking compound to restore integrity of wall or ceiling system in accordance with manufacturers' recommendations.
 - 3.5 Prepare surfaces for finishing.
- 4 Clean up.
- 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and

codes of practice.

- 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWC2001A Complete penetrations and flashings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWC2001 Complete penetrations and flashings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWC2001A Complete penetrations and flashings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by completing three penetration and flashing tasks including:

- one for electrical services
- one for communication services.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for completing penetrations and flashings associated with wall and ceiling lining
- safety requirements for completing penetrations and flashings associated with wall and ceiling lining, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- characteristics and applications of wall and ceiling lining materials:
 - beads
 - cement render
 - fibre cement sheets
 - finishing materials
 - plaster compounds
 - plasterboard
 - plastersglass sheets

- water resistant plasterboard
- penetration and flashing techniques
- processes for calculating material requirements and measuring penetration locations
- quality requirements for completing penetrations and flashings
- techniques for locating services
- types and uses of plans, drawings and specifications for penetrations and flashings
- types and uses of tools and equipment used when completing penetrations and flashings
- types of services and purposes for which penetrations and flashings are required.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWC3001 Install and finish plasterboard and fibre cement sheeting to curved wall and ceiling substrates

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWC3001A Install and finish plasterboard and fibre cement sheeting to curved walls and ceilings. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to fix and finish plasterboard and fibre cement sheeting to steel and timber framed curved walls and curved ceilings.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and ceiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|--|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements. |
| | 1.3 Select and use personal protective equipment (PPE) for each stage of the task. |
| | 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.5 Collect evidence that the carpenter has completed the substrate to be plaster ready. |
| | 1.6 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside. |
| | 1.7 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Prepare work area for installation. | 2.1 Prepare work area and substrate for application of sheeting. |
| | 2.2 Prepare and check timber/steel wall and ceiling framing for consistency of curve and rectify or report any faults. |
| 3 Fix and finish plasterboard and fibre cement products to walls and ceilings. | 3.1 Measure and mark materials to meet task requirements and minimise wastage. |
| | 3.2 Cut wall and ceiling sheets to fit with required clearances. |
| | 3.3 Fix wall and ceiling sheets with mechanical fastenings or combined adhesive and fasteners. |
| | 3.4 Prepare compounds for backblocking and jointing. |

- 3.5 Apply backblocks.
- 3.6 Joint and finish plasterboard and fibre cement sheeting
- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWC3001A Install and finish plasterboard and fibre cement sheeting to curved walls and ceilings

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWC3001 Install and finish plasterboard and fibre cement sheeting to curved wall and ceiling substrates

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWC3001A Install and finish plasterboard and fibre cement sheeting to curved walls and ceilings. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by installing and finishing 15 square metres of plasterboard or fibre cement sheeting to a curved substrate, using either mechanical or adhesive fixing systems.

All work must be performed to the standard required in the workplace and must comply with National Construction Code (NCC), Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for installing and finishing plasterboard and fibre cement sheeting to curved wall and ceiling substrates
- quality policies and standards for installing and finishing plasterboard and fibre cement sheeting to curved wall and ceiling substrates
- safety requirements for installing and finishing plasterboard and fibre cement sheeting to curved walls and ceilings, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets

- environmental requirements for installing and finishing plasterboard and fibre cement sheeting
- plans, drawings and specifications for installing and finishing plasterboard and fibre cement sheeting to curved wall and ceiling substrates
- processes for the calculation of material requirements for installing and finishing plasterboard and fibre cement sheeting to curved wall and ceiling substrates
- techniques for fixing materials to steel and timber frames
- types, uses and limitations of materials used for installing and finishing plasterboard and fibre cement sheeting to curved wall and ceiling substrates
- wall and ceiling terminology for curved walls and ceilings, including:
 - cambered
 - elliptical
 - pitched
 - undulating
- types of tools and equipment for installing and finishing plasterboard and fibre cement sheeting to curved wall and ceiling substrates.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWC3002 Install and finish plasterboard and fibre cement sheeting to arch substrate

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Formatting correction to Elements and Performance Criteria.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and equivalent to CPCCWC3002A Install and finish plasterboard and fibre cement sheeting to arches. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to fix and finish plasterboard and fibre cement sheeting to arch substrate.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and ceiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements. |
| | 1.3 Select and use personal protective equipment (PPE) for each stage of the task. |
| | 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Prepare work area for installation. | 2.1 Prepare work area and arch substrate for application of sheeting. |
| | 2.2 Check timber/steel wall framing for straightness and plumb and rectify or report any faults. |
| 3 Fix plasterboard and fibre cement products to arch substrate. | 3.1 Measure and mark materials to work requirements and for minimal wastage. |
| | 3.2 Cut sheets to fit with clearances. |
| | 3.3 Fix sheets with mechanical fastenings or combined adhesive/ fasteners. |

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| 4 Joint and finish materials. | 4.1 | Apply additional design details and features. |
| | 4.2 | Install beading to design requirements. |
| | 4.3 | Complete jointing and finishing of plasterboard and fibre cement sheeting. |
| 5 Clean up. | 5.1 | Clear work area and dispose of, reuse or recycle materials. |
| | 5.2 | Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWC3002A Install and finish plasterboard and fibre cement sheeting to arches.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWC3002 Install and finish plasterboard and fibre cement sheeting to arch substrate

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Formatting correction to Elements and Performance Criteria.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWC3002A Install and finish plasterboard and fibre cement sheeting to arches. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

- installing and finishing to specification, one plasterboard arch with:
 - a minimum of two sheets
 - wall and corner junctions
 - application or arch beads
 - mechanical or adhesive fixing systems
- setting out to specification one each of segmental, gothic, elliptical, Tudor and ogee arches.

All work must be performed to the standard required in the workplace and must comply with the National Construction Code (NCC), Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for installing and finishing plasterboard and fibre cement sheeting to arch substrates
- quality policies and standards for installing and finishing plasterboard and fibre cement sheeting to arch substrates
- safety requirements for installing and finishing plasterboard and fibre cement sheeting to arches, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for installing and finishing plasterboard and fibre cement sheeting to arch substrates
- plans, drawings and specifications for installing and finishing plasterboard and fibre cement sheeting to arch substrates
- processes for the calculation of material requirements for installing and finishing plasterboard and fibre cement sheeting to arch substrates
- techniques for fixing materials to steel and timber frames for installing and finishing plasterboard and fibre cement sheeting to arch substrates
- types, uses and limitations of materials used for installing and finishing plasterboard and fibre cement sheeting to arch substrates
- arch types, options, uses and limitations, including:
 - elliptical
 - gothic
 - may include
 - ogees
 - segmental
 - semi-circular
 - three-centred
- types of tools and equipment for installing and finishing plasterboard and fibre cement sheeting to arch substrates.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWC3003 Install dry wall passive fire-rated systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWC3003A Install passive fire-wall rated systems Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to select and install dry wall fire-rated systems to walls and ceilings.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and ceiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements. |
| | 1.3 Plan all work strictly within the manufacturer's fire-rating design, so that fire-rating criteria are always met. |
| | 1.4 Select and use personal protective equipment (PPE) for each stage of the task. |
| | 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside. |
| | 1.7 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Line timber stud wall using fire-rated system. | 2.1 Determine whether structure of the timber wall is for load or non-load bearing. |
| | 2.2 Select manufacturer's fire-rating design for the timber stud wall. |
| | 2.3 Set out materials and space fixings to manufacturer's fire-rating design. |
| | 2.4 Fix material and complete penetrations. |
| | 2.5 Finish joints to exposed face sheet layers using fire-rated materials and procedures to manufacturer's fire-rating design. |

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| 3 Construct steel stud fire-rated partition system. | 3.1 | Select manufacturer's fire-rating design for the steel stud wall. |
| | 3.2 | Determine the fixing requirements for the steel stud wall, as designed to meet fire test criteria. |
| | 3.3 | Secure deflection heads and apply sealant. |
| | 3.4 | Setout material, meeting the manufacturer's fire-rating design. |
| | 3.5 | Space fixings, fix materials and complete penetrations. |
| | 3.6 | Finish joints to exposed face sheet layers using fire-rated materials and procedures to manufacturer's fire-rating design. |
| 4 Construct fire-rated shaft wall system. | 4.1 | Select materials to manufacturer's fire-rating design and fix components to precise clearances. |
| | 4.2 | Set out materials and complete penetrations. |
| | 4.3 | Finish joints to exposed face sheet layers using fire-rated materials and procedures to manufacturer's fire-rating design. |
| 5 Line timber joist ceiling using fire-rated system. | 5.1 | Check ceiling substrate and line to manufacturer's fire-rating design. |
| | 5.2 | Select fixings and apply lining. |
| | 5.3 | Space fixings at correct intervals. |
| | 5.4 | Complete penetrations. |
| | 5.5 | Finish joints to exposed face sheet layers using fire-rated materials and procedures to manufacturer's fire-rating design. |
| 6 Construct suspended ceiling with a fire-rating system. | 6.1 | Select materials and choose fixings for manufacturer's fire-rating design for fire-rated ceiling. |
| | 6.2 | Construct ceiling flat, true, level and structurally sound. |

- 6.3 Complete penetrations.
 - 6.4 Finish joints to exposed face sheet layers using fire-rated materials and procedures to manufacturer's fire-rating design.
- 7 Clean up.
- 7.1 Clear work area and dispose of, reuse or recycle materials.
 - 7.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWC3003A Install passive fire-wall rated systems

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWC3003 Install dry wall passive fire-rated systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWC3003A Install passive fire-wall rated systems Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by installing to specification a minimum of three dry wall passive fire-rated systems:

- one to a steel stud wall
- one covering columns and beams
- one comprising a multiple layer system.

All work must be performed to the standard required in the workplace and must comply with the National Construction Code (NCC), Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for installing dry wall passive fire-rated systems
- regulations and building codes related to dry wall passive fire-rated systems, including:
 - types and specifications for dry wall passive fire-rated systems related to steel stud and timber stud walls, shaft walls, timber joists and suspended ceilings
- quality policies and standards for installing dry wall passive fire-rated systems

- safety requirements for installing dry wall passive fire-rated systems, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for installing dry wall passive fire-rated systems
- basic combustion theory relating to dry wall passive fire-rated systems
- manufacturer's design installation techniques and processes
- plans, drawings and specifications for installing dry wall passive fire-rated systems
- processes for the calculation of material requirements for installing dry wall passive fire-rated systems
- range of materials commonly used in the installation of dry wall passive fire-rated systems:
 - base compound coats
 - finishing coats
 - fire grade metal studs and track
 - fire grade plasterboard sheeting
 - fire sealants
 - perforated paper tapes
 - vermiculite or equivalent product
 - fasteners
- tools and equipment used in the installation of dry wall passive fire-rated systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF2001 Handle wall and floor tiling materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF2001A Handle wall and floor tiling materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to safely handle and store wall and floor tiling products and materials.

It includes the preparation, handling, sorting and stacking, distribution and disposal of wall and floor tiling products and materials.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to handle wall and floor

1.1 Read and interpret task work instructions and plan sequence of work.

- tiling materials.
- 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
- 2 Receive, sort and distribute wall and floor tiling materials.
- 2.1 Check tiling products and materials conform to task quality and quantity.
 - 2.2 Handle tiling material in accordance with safe work method statements.
 - 2.3 Handle, proportion, mix and store tiling materials.
 - 2.4 Sort tiling products and materials by type and size, and stack for ease of identification and task sequence.
 - 2.5 Distribute tiling products and materials to job location.
- 3 Handle and remove surplus material and clean up.
- 3.1 Handle surplus materials safely and effectively in accordance with safety data sheets.
 - 3.2 Identify hazardous material for separate handling by authorised personnel.
 - 3.3 Handle, recover and transfer tiling products and material from job location and store in accordance with safety data sheets and workplace requirements.
 - 3.4 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWF2001A Handle wall and floor tiling materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWF2001 Handle wall and floor tiling materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF2001A Handle wall and floor tiling materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by handling, sorting, distributing, stacking and storing wall and floor tiling products and materials required for the tiling of a minimum 10 square metres of the walls and floor of a bathroom.

All work must be performed to the standard required in the workplace and comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace quality policies and standards for handling wall and floor tiling materials
- safety requirements relevant to handling wall and floor tiling materials, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- techniques for safely handling, sorting, distributing, stacking and storing wall and floor tiling materials
- environmental requirements for handling wall and floor tiling materials
- techniques for handling, sorting, distributing, stacking and storing large format tiles
- processes to handle, proportion, mix and store materials
- types and uses of materials storage and environmentally friendly waste management relevant to handling wall and floor tiling materials
- types and uses of plans, drawings and specifications for handling wall and floor tiling materials
- types and uses of tools and equipment for handling wall and floor tiling materials
- wall and floor tiling processes and sequences.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF2002 Use wall and floor tiling tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF2002A Use wall and floor tiling tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to safely and effectively use wall and floor tiling tools and equipment.

It includes selection and use of tools and equipment for specific applications.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare to use wall and floor | 1.1 Read and interpret task instructions to use tools and equipment. |
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| tiling tools and equipment. | 1.2 | Select and use personal protective equipment (PPE) as required for each stage of the task. |
| | 1.3 | Plan all work to comply with laws and regulations, work health and safety (WHS) and environmental requirements, manufacturers' recommendations, workplace requirements, drawings and specifications. |
| | 1.4 | Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| 2 Select hand and power tools and equipment. | 2.1 | Select tools and equipment consistent with hazard minimisation and requirements of the task. |
| | 2.2 | Review manufacturers' recommendations for operating and using tools and equipment. |
| | 2.3 | Check tools and equipment for correct function and report any faults. |
| | 2.4 | Check power leads for current tags, safety and serviceability and report any faults. |
| | 2.5 | Check and maintain power tool guards following manufacturers' recommendations. |
| | 2.6 | Follow WHS requirements for using tools and equipment. |
| | 2.7 | Select devices to safely hold or support material during operation. |
| | 2.8 | Complete pre-operational checks, including checking lubricants and water. |
| 3 Use tools and equipment and clean up. | 3.1 | Connect safe power supply to work area. |
| | 3.2 | Undertake start-up and shut-down processes following manufacturers' recommendations. |
| | 3.3 | Use tools and equipment safely and effectively in accordance with manufacturers' recommendations and workplace requirements. |
| | 3.4 | Switch off tools and equipment and locate safely when |

not in immediate use.

- 3.5 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCFWF2002A Use wall and floor tiling tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCF2002 Use wall and floor tiling tools and equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCF2002A Use wall and floor tiling tools and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by completing wall and floor tiling tasks using a range of tools and equipment, including as a minimum:

- buckets
- caulking guns
- levelling equipment:
 - straight edges
 - string lines
 - spirit levels
 - laser levels
- hammers
- measuring tapes and rules
- nippers
- scrapers
- shovels
- spacers and wedges
- sponges
- squares
- squeegees
- straight edges
- tile cutters and scribes
- trowels
- wet and dry diamond saws
- floats
- adhesive mixers
- diamond hole saws
- power drills

- angle grinders
- power leads.

All work using the above tools and equipment must be performed to the standard required in the workplace and comply with Commonwealth and state/territory laws and regulations, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace quality policies and standards for using wall and floor tiling tools and equipment
- safety requirements for using wall and floor tiling tools and equipment, including:
 - job safety analyses and/or or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and and/or or territory equivalent
 - personal protective equipment (PPE)
- environmental requirements for using wall and floor tiling equipment
- characteristics, applications and safe use of wall and floor tiling tools and equipment:
 - lippage reduction systems
 - buckets
 - caulking guns
 - levelling equipment:
 - straight edges
 - stringlines
 - spirit levels
 - laser levels
 - hammers
 - measuring tapes and rules
 - nippers
 - scrapers
 - shovels
 - spacers and wedges
 - sponges
 - squares
 - squeegees
 - straight edges
 - tile cutters and scribes
 - trowels
 - wet and dry diamond saws
 - floats

- adhesive mixers
- diamond hole saws
- power drills
- angle grinders
- power leads
- manufacturers' recommendations for tools and equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3001 Prepare surfaces for tiling application

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3001A Prepare surfaces for tiling application. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to repair and prepare different substrates for wall and floor tiling applications.

The unit is suitable for those with basic skills and knowledge undertaking routine work tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|--|-----|--|
| 1 Plan and prepare to prepare surfaces for tiling application. | 1.1 | Read and interpret task work instructions and plan sequence of work. |
| | 1.2 | Select and use personal protective equipment (PPE) as |

- required for each stage of the task.
- 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare materials for preparing substrate.
- 2.1 Check tiling materials for product suitability to task, ensuring compatibility with surface material.
 - 2.2 Determine activities for material preparation.
 - 2.3 Carry out material preparation to satisfy the requirements of the application process.
- 3 Prepare framed substrates.
- 3.1 Prepare and install underlay for tiling application.
 - 3.2 Finish substrate surface to approved surface standards with joints flush.
 - 3.3 Clean surfaces to remove all contaminants and loose material.
- 4 Prepare cementitious and masonry substrate surface.
- 4.1 Determine substrate structure and clean surfaces to remove all contaminants and loose material.
 - 4.2 Control suction with the use of water and apply slurry and bonding agent if required.
 - 4.3 Measure and mix materials for screeding and/or rendering, ensuring that mortar is bonded to the substrate.
 - 4.4 Screed and/or render and finish mortar to float finish

applying specified fall.

4.5 Protect the screeded and/or rendered area with signs and barricades to allow to dry and/or cure.

5 Clean up.

5.1 Clear work area and dispose of, reuse or recycle materials.

5.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWF3001A Prepare surfaces for tiling application.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCF3001 Prepare surfaces for tiling application

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCF3001A Prepare surfaces for tiling application. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by preparing for tiling:

- 9 square metres of a framed bathroom wall and floor
- 9 square metres of a masonry bathroom wall and floor.

All work must be performed to the standard required in the workplace and comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for preparing surfaces for tiling
- workplace quality policies and standards for preparing surfaces for tiling
- safety requirements for preparing surfaces for tiling, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- environmental requirements for preparing surfaces for tiling
- types and uses of materials storage and environmentally friendly waste management
- types and uses of tools and equipment for preparing surfaces for tiling
- processes for selection of compatible materials for preparing surfaces for tiling
- processes for the calculation of material requirements for preparing surfaces for tiling
- surface preparation materials and techniques for:
 - underlay material
 - substrate preparation
 - substrate surface materials.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3002 Install floor tiles

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3002A Fix floor tiles. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install floor tiles to different substrates.

It includes the preparation, cutting, installing and grouting of tiles for floors, including steps and and/or or stairs and thresholds.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to install floor tiles.

1.1 Read and interpret task work instructions and plan sequence of work.

- 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Set out floor tiling.
- 2.1 Clear area to be tiled.
 - 2.2 Check that tiles are fit for purpose and conform to task size, patterns, colours and characteristics.
 - 2.3 Check waterproof membrane for integrity and conformance to regulatory requirements.
 - 2.4 Set out tile work to be symmetrical and balanced, including allowance for movement joints, and to produce minimal waste.
- 3 Cut floor tiles.
- 3.1 Cut tiles without damage to tile edges, surfaces or finish.
 - 3.2 Cut holes for penetrations to shape, size and specified tolerance.
- 4 Prepare substrate and install floor tiles.
- 4.1 Prepare and apply screed to specified consistency and surface finish.
 - 4.2 Prepare substrate surface, free from contaminants and residues to receive adhesive.
 - 4.3 Match adhesive with tile and substrate material and mix according to manufacturers' instructions.

- | | | |
|---|--|--|
| | 4.4 | Install tiles, maintaining alignment of joints that are uniform in size and with the specified finished surface. |
| | 4.5 | Insert movement joints. |
| 5 | Tile treads, risers, steps and thresholds. | |
| | 5.1 | Determine step rises and goings from steps and and/or or stairs. |
| | 5.2 | Set out steps for uniform rise to comply with building code and make even cut on both sides of steps. |
| | 5.3 | Install tiles, maintaining alignment of joints that are uniform in size and with the specified finished surface. |
| 6 | Grout tiles. | |
| | 6.1 | Clean and prepare joints to receive grout. |
| | 6.2 | Mix and apply grout. |
| | 6.3 | Clean and polish tiles. |
| | 6.4 | Protect tiles from damage during remaining construction. |
| 7 | Clean up. | |
| | 7.1 | Clear work area and dispose of, reuse or recycle materials. |
| | 7.2 | Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWF3002A Fix floor tiles.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCF3002 Install floor tiles

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCF3002A Fix floor tiles. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

- tiling a minimum of:
 - four square metres of wet area floor laid with fall and waterproofing
 - four square metres of floor with movement joints and large format tiles (greater than or equal to 600 millimetres x 300 millimetres) with rectified edges
 - four square metres set out and laid on the diagonal with a half-tile border
 - three steps at least 900 millimetres wide with minimum 115 millimetre risers, including treads
- cutting tiles around a circular floor grate.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for installing floor tiles
- workplace quality policies and standards for installing floor tiles
- safety requirements for installing floor tiles, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- environmental requirements for installing floor tiles
- placement and design of movement joints
- types and uses of materials storage and environmentally friendly waste management
- types and uses of tools and equipment for installing floor tiles

- processes for the calculation of material requirements for installing floor tiles
- techniques for:
 - installing tiles to floors and step and and/or or stairs
 - matching floor joints between adjoining areas
 - installing tiles over different substrates in common use, waterproofing membranes, acoustic underlays and de-coupling systems
 - cutting and installing of tiles in common use:
 - large format tiles
 - natural and reconstituted stone tiles
- tiling material qualities, characteristics, preparation requirements, techniques, applications and limitations:
 - adhesive types and classifications
 - grout types, including epoxy grout.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3003 Install wall tiles

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3003A Fix wall tiles. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to use adhesive to install wall tiles to differing substrates.

It includes the preparation, cutting, installation and grouting of tiles for walls, including internal and external wall junctions and junctions between walls and floors.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Plan and prepare to install wall tiles. | 1.1 Read and interpret task work instructions and plan sequence of work. |
|---|--|

- 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Set out wall tiling.
- 2.1 Prepare substrate and area to be tiled, including checking waterproof membrane for integrity and conformance to regulatory requirements.
 - 2.2 Check tiles conform to size, pattern, colour and characteristic requirements of the task and are fit for purpose.
 - 2.3 Check internal and external corner substrates for square and plumb.
 - 2.4 Determine and set out tile work grid patterns to be symmetrical and balanced with movement joints, and to produce minimal waste.
- 3 Cut wall tiles.
- 3.1 Cut tiles without damage to tile edges, surfaces or finish.
 - 3.2 Cut holes for penetrations to shape, size and specified tolerance.
- 4 Prepare substrate and install wall tiles
- 4.1 Prepare and apply adhesive to substrate and/or tile surface.
 - 4.2 Prepare and install tiles set to level and plumb.

- 4.3 Check horizontal joint for straightness, and check tile edges and surface alignment.
 - 4.4 Install tiles to alignment, maintaining designed pattern.
 - 4.5 Install tiles with required coverage, maintaining joint and face alignment.
 - 4.6 Show even margins around openings, frames and fittings.
 - 4.7 Maintain joints straight and uniform in width with due allowance for tolerance of tile sizes.
 - 4.8 Insert specified movement joints.
- 5 Tile internal and external corners.
 - 5.1 Check setting out for plumb, level and square and to be within specified tolerance.
 - 5.2 Cut and install bottom course to create raked corner.
 - 5.3 Make joints for abutting tiles in accordance with designed margin for grouting and movement joints.
 - 5.4 Install cove and/or coved tiles to internal corners.
 - 5.5 Install trim or mitre to external corners.
- 6 Grout tiles.
 - 6.1 Clean and prepare joints to receive grout.
 - 6.2 Mix and apply grout.
 - 6.3 Clean and polish tiles.
 - 6.4 Protect tiles from damage during remaining construction.
- 7 Clean up.
 - 7.1 Clear work area and dispose of, reuse or recycle materials.
 - 7.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCFWF3003A Fix wall tiles.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCF3003 Install wall tiles

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCF3003A Fix wall tiles. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by preparing the substrate and tiling a minimum of:

- the front and surrounds of a bath, at least 1500 millimetres long
- four square metres of wall that includes a door opening and a niche
- one lineal metre mitred hob
- one lineal metre trim installed to an external corner.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for installing wall tiles
- workplace quality policies and standards for installing wall tiles
- safety requirements for installing wall tiles, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- environmental requirements for installing wall tiles
- placement and design of movement joints
- types and uses of materials storage and environmentally friendly waste management
- plans, drawings and specifications for installing wall tiles
- types and uses of tools and equipment for installing wall tiles
- processes for calculation of material requirements for installing wall tiles
- techniques in installing tiles to walls and corners:
 - preparation of structures and substrates

- types of substrates
- types and uses of waterproofing systems
- cutting and installing types of tiles in common use:
 - large format tiles
- tiling material qualities, characteristics, preparation requirements, techniques, applications and limitations:
 - adhesive types and classifications
 - grout types, including epoxy grout.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3004 Repair wall and floor tiling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3004A Repair wall and floor tiles.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to repair tiling by replacing wall and floor tiles.

It includes preparing, removing and replacing wall and floor tiles and repairing and/or replacing waterproofing.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of unit *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to repair wall and floor

1.1 Read and interpret task work instructions and plan sequence of work.

- tiling.
- 1.2 Select and use personal protective equipment (PPE) as required for each task stage.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Repair damaged tiles
- 2.1 Remove damaged or defective tiles avoiding damage to surrounding tiles.
 - 2.2 Clean and clear old bedding to allow installation of replacement tile.
 - 2.3 Repair or replace existing waterproofing.
 - 2.4 Select and cut replacement tiles to match surrounding tiles.
 - 2.5 Install tiles to maintain alignment with joints.
 - 2.6 Carry out grouting and clean tiles.
- 3 Clean up.
- 3.1 Clear work area and dispose of, reuse or recycle materials.
 - 3.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWF3004A Repair wall and floor tiles.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCF3004 Repair wall and floor tiling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCF3004A Repair wall and floor tiles.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by removing and replacing a minimum of three damaged wall tiles and three damaged floor tiles, combined minimum area one square metre, which are installed with adhesive.

In performing the above tasks, at least one tile must be installed to waterproofing which requires repair.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for repairing tiles
- safety requirements for repairing tiles, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and and/or territory equivalent
 - personal protective equipment (PPE)
- environmental requirements for repairing tiles
- types and uses of materials storage and environmentally friendly waste management
- types and uses of tools and equipment types for repairing tiles
- processes for the calculation of material requirements
- techniques for removing and replacing tiles to walls and floors
- tiling material qualities, characteristics, preparation requirements, techniques, applications and limitations:
 - adhesive types and classifications

- grout types, including epoxy grout.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3005 Install decorative tiling

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3005A Carry out decorative tiling.
Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to locate and set out dimensions and plans for decorative tiling projects to form specific patterns.

It includes advanced setting out and installation of decorative and heritage tiles.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare to install decorative tiling.
 - 1.1 Read and interpret task work instructions and plan sequence of work.
 - 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
 - 2 Form decorative design.
 - 2.1 Inspect tiles to ensure conformance with the elements of the design, including colour, shape and geometry of the project.
 - 2.2 Set out and lay out tiles to required shape and size for decorative design.
 - 2.3 Cut tiles to complete the design set out.
 - 2.4 Align tile joints, plumb and square, and position tiles.
 - 3 Install tiles.
 - 3.1 Prepare substrate surfaces.
 - 3.2 Match and mix adhesive with tile and substrate material according to usage and climatic conditions.
 - 3.3 Install tiles to designed set out.
 - 3.4 Install and adjust border and/or decorative tiles to set out.
 - 4 Grout tiles.
 - 4.1 Clean and prepare joints to receive grout.

- 4.2 Mix and apply grout.
 - 4.3 Clean and polish tiles.
 - 4.4 Protect tiles from damage during remaining construction.
- 5 Clean up.
- 5.1 Clear work area and dispose of, reuse or recycle materials.
 - 5.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCFWF3005A Carry out decorative tiling.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWF3005 Install decorative tiling

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3005A Carry out decorative tiling.
Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by selecting, setting out and installing:

- a minimum two square metres of decorative wall tiles and strips to a wall, finished to differing heights
- a minimum of 1.5 square metres of tessellated floor tiles, including a least two different sizes, and a surrounding decorative border to floor.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- elements of design reflecting architectural and historical periods
- types of decorative tiles and designs, including:
 - heritage/Federation
 - tessellated
 - encaustic
- compliance requirements of Australian Standards, and Heritage requirements for decorative tiling
- quality policies and standards for decorative tiling
- safety requirements for decorative tiling, including:

- job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state/territory equivalent
- personal protective equipment (PPE)
- environmental requirements for decorative tiling
- types and uses of decorative tiling materials:
 - tiles and patterns
 - adhesives
 - grouting
 - substrates
- tiling material qualities:
 - characteristics
 - preparation requirements
 - techniques
 - applications
 - limitations
- design reproduction and application methods for decorative tiling
- types and uses of materials storage and environmentally friendly waste management for decorative tiling
- types and uses of plans, drawings and specifications for decorative tiling
- types and uses of tools and equipment for decorative tiling
- processes for the calculation of material requirements for decorative tiling
- tiling material qualities, characteristics, preparation requirements, techniques, applications and limitations:
 - adhesive types and classifications
 - grout types, including epoxy grout.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3006 Install mosaic tiling

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to Elements and Performance Criteria 1 through 3.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3006A Carry out mosaic tiling. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install mosaic tiles to wall and floors.

It includes the cutting and laying out of a pattern or template and the application of the tiles to the required area.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare to install mosaic tiling.	<p>1.1 Read and interpret task work instructions and plan sequence of work.</p> <p>1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.</p> <p>1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.</p> <p>1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.</p> <p>1.5 Select tools and equipment, check for serviceability and report any faults.</p> <p>1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.</p>
2 Prepare materials.	<p>2.1 Prepare work area for mosaic tiling.</p> <p>2.2 Check mosaic tiles conform to the task size, pattern, colour and characteristics.</p> <p>2.3 Set out mosaic work to be symmetrical, balanced and to produce minimal waste.</p>
3 Prepare substrate.	<p>3.1 Prepare substrate surfaces.</p> <p>3.2 Clean surface free of loose material and contaminants ready for tile installation.</p>
4 Install mosaic tiles to flat surfaces.	<p>4.1 Mark prepared mosaic tiles.</p> <p>4.2 Select adhesive to ensure light-coloured tiles are not darkened and mix according to usage and climatic conditions.</p> <p>4.3 Apply adhesive to substrate and install mosaic tiles maintaining alignment to the set-out lines and face</p>

- surface of the tiles.
- 4.4 Position mosaic tiles prior to final set and adjust to ensure joints are consistent.
 - 4.5 Finish surface flat with tile face flush.
- 5 Grout tiles.
- 5.1 Clean and prepare joints to receive grout.
 - 5.2 Mix and apply grout.
 - 5.3 Clean and polish tiles.
 - 5.4 Protect tiles from damage during remaining construction.
- 6 Clean up.
- 6.1 Clear work area and dispose of, reuse or recycle materials.
 - 6.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCFWF3006A Carry out mosaic tiling.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWF3006 Install mosaic tiling

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Correction to Elements and Performance Criteria 1 through 3.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3006A Carry out mosaic tiling. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by preparing and installing mosaic tiles to a minimum:

- of two square metres of wall, including a niche
- of two lineal metres of hob and return
- of one square metre of shower floor with fall, including a drain.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for mosaic tiling
- workplace quality policies and standards for mosaic tiling
- safety requirements for mosaic tiling, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- environmental requirements for mosaic tiling
- types and uses of materials storage and environmentally friendly waste management for mosaic tiling
- characteristics, preparation requirements, limitations and compatibility of mosaic tiling substrates and materials:
 - mosaic tiles:

- ceramic
- stone
- glass
- metal
- adhesives
- grouting materials
- tile trim (external and internal corners)
- types of substrates
- mosaic tiling methods and set out procedures
- types and uses of plans, drawings and specifications for mosaic tiling
- types and uses of mosaic tiling tools and equipment
- processes for the calculation of material requirements for mosaic tiling
- tiling material qualities, characteristics, preparation requirements, techniques, applications and limitations:
 - adhesive types and classifications
 - grout types, including epoxy grout.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3007 Tile curved surfaces

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3007A Tile curved surfaces. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to tile curved surfaces. It includes the preparation for and tiling of columns and arches.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---|-----|--|
| 1 Plan and prepare to tile curved surfaces. | 1.1 | Read and interpret task work instructions and plan sequence of work. |
| | 1.2 | Select and use personal protective equipment (PPE) as |

required for each task stage.

- 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare and tile circular columns.
- 2.1 Calculate and establish extent of curve.
 - 2.2 Use levelling equipment for intermediate marking to level line set out around the surface.
 - 2.3 Make template/s to form an accurate curve line for tiled surface.
 - 2.4 Calculate a balanced design and cut tiles to size.
 - 2.5 Prepare substrate and compatible adhesive.
 - 2.6 Install tiles to level set out, template curve and specifications.
 - 2.7 Minimise voids in adhesive tile beds.
- 3 Prepare and tile arches.
- 3.1 Calculate and establish extent of arch and size of voussoirs at the intrados and the extrados.
 - 3.2 Use levelling equipment and calculate springing line.
 - 3.3 Cut tiles to size using template/s.
 - 3.4 Prepare substrate and compatible adhesive.
 - 3.5 Install voussoirs and returns to set-out.
 - 3.6 Minimise voids in adhesive tile beds.

- 4 Grout tiles.
 - 4.1 Clean and prepare joints to receive grout.
 - 4.2 Mix and apply grout.
 - 4.3 Clean and polish tiles.
 - 4.4 Protect tiles from damage during remaining construction.

- 5 Clean up.
 - 5.1 Clear work area and dispose of, reuse or recycle materials.
 - 5.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWF3007A Tile curved surfaces.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCF3007 Tile curved surfaces

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCF3007A Tile curved surfaces. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by tiling:

- the surface of a circular column that is at minimum 360 millimetres in diameter and one metre high
- an archway with minimum dimensions:
 - span one metre
 - rise 200 millimetres
 - 100 millimetre returns.

All work must be performed to the standard required in the workplace and comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of Australian Standards for installing wall tiles
- workplace quality policies and standards for tiling
- safety requirements for installing wall tiles to curved surfaces, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- environmental requirements for installing tiles
- placement and design of movement joints when installing wall tiles to curved surfaces
- types and uses of materials storage and environmentally friendly waste management
- types and uses of plans, drawings and specifications for installing tiles to curved surfaces
- types and uses of tools and equipment for installing tiles to curved surfaces
- processes for the calculation of material requirements for installing tiles to curved surfaces

- techniques in installing tiles to curved surfaces:
 - preparation of structures and substrates
- types of substrates
- cutting and installing of types of tiles in common use on curved surfaces
- tiling material qualities, characteristics, preparation requirements, techniques, applications and limitations
- processes for the calculation of material requirements for tiling curved surfaces
- tiling material qualities, characteristics, preparation requirements, techniques, applications and limitations:
 - adhesive types and classifications
 - grout types, including epoxy grout.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3008 Tile pools and spas

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3008A Tile domestic pools and spas. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to tile a pool or spa.

It includes setting out, tiling and finishing straight, curved and tapered pool or spa wall and floor surfaces.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative or certification requirements apply to this unit in some states and territories and users are advised to check with the relevant regulatory authority.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare to tile pools and spas.	<p>1.1 Read and interpret task work instructions and plan sequence of work.</p> <p>1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.</p> <p>1.3 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.</p> <p>1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.</p> <p>1.5 Select tools and equipment, check for serviceability and report any faults.</p> <p>1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.</p>
2 Prepare substrate and pool or spa.	<p>2.1 Prepare substrate for application of render and waterproofing system.</p> <p>2.2 Apply render and or/screed to achieve smooth surface and enable specified set out.</p> <p>2.3 Apply waterproofing system to manufacturer's instructions.</p>
3 Set out and prepare for tiling.	<p>3.1 Determine levels of pool or spa and set out to exact specifications.</p> <p>3.2 Calculate pool or spa surface area and divide into sectional shapes involving whole tiles and cut tiles, considering sheet sizes of tiles and maintaining straight lines where possible.</p> <p>3.3 Mark out cross-centre lines on pool or spa surface.</p> <p>3.4 Set out curved surface to form regular shapes running down and through base.</p>

- 3.5 Determine tile sizes and shapes and set out tapered sections in highly curved and concave areas, and cut tiles.
- 3.6 Prepare specified adhesive to manufacturer's specifications.
- 4 Install tiles.
 - 4.1 Apply adhesive and lay tiles maintaining alignment to set out lines and surface of tiles.
 - 4.2 Install tiles in straight sections working with full tiles from the coping down, maintaining parallel to cross-centre lines and regular face alignment.
 - 4.3 Install tiles to pool surface, maintaining levels and curvature.
 - 4.4 Install tiles to tapered areas.
- 5 Grout tiles.
 - 5.1 Clean and prepare joints to receive grout.
 - 5.2 Mix and apply grout.
 - 5.3 Clean and polish tiles.
 - 5.4 Protect tiles from damage during remaining construction.
- 6 Clean up.
 - 6.1 Clear work area and dispose of, reuse or recycle materials.
 - 6.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWF3008A Tile domestic pools and spas.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWF3008 Tile pools and spas

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWF3008A Tile domestic pools and spas.
Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by tiling a minimum of a coved corner of a pool or spa with coping, extending a minimum 1 metre deep and 1 metre wide in all directions with the floor falling a minimum 1:60.

All work must be performed to the standard required in the workplace and comply with Commonwealth and state/territory laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the National Construction Code (NCC) and Australian Standards requirements for tiling pools and spas
- workplace quality policies and standards for tiling pools and spas
- safety requirements for tiling pools and spas, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- environmental requirements relevant to tiling pools and spas
- types and uses of materials storage and environmentally friendly waste management
- types and uses of plans, drawings and specifications for tiling pools and spas
- types and uses of tools and equipment for tiling pools and spas
- types and uses of pool and spa tiling materials

- processes for the calculation of material requirements and set outs for tiling pools and spas
- techniques for tiling pools and spas
- processes for tiling curved and tapered surfaces
- compatible render/screed, waterproofing, adhesive and grout systems for tiling pools and spas.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWF3009 Apply waterproofing for wall and floor tiling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Application

This unit specifies the skills and knowledge required to apply waterproofing to internal and external wet areas ready for tiling.

It includes identification of the appropriate waterproofing system to be used, its preparation and application.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Wall and floor tiling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and prepare to apply waterproofing

1.1 Read and interpret task work instructions and plan sequence of work.

- for wall and floor tiling.
- 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.
 - 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
- 2 Prepare for internal and external waterproofing installation.
- 2.1 Check wet area outlets and fixtures are set out to drawings and specifications.
 - 2.2 Select waterproofing systems suitable for internal and external wet area applications.
 - 2.3 Check waterproof system for compatibility with substrate material and tiling system.
 - 2.4 Check that substrates have smooth and uniform finishes with specified fall ratio to drainage points.
 - 2.5 Check substrate moisture content to comply with manufacturers' membrane recommendations.
- 3 Apply waterproofing.
- 3.1 Prepare and prime substrates for waterproofing.
 - 3.2 Install bond breakers/fillets, water stops and drainage flanges.
 - 3.3 Apply waterproofing membrane to primed surface at correct thickness and allow to cure to manufacturers' specification.
 - 3.4 Perform final inspection and completion activities.
 - 3.5 Protect waterproofing membrane.

- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWF3009 Apply waterproofing for wall and floor tiling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by waterproofing an internal wet area and an external wet area ready for tiling, including:

- one shower area 1800 millimetres high, 900 millimetres x 900 millimetres wide, incorporating:
 - a niche
 - tap penetrations
 - draining connection
 - water stop/hob
- surrounds for an inserted bath with periphery barrier or water stop
 - a minimum of four square metres of balcony/deck:
 - where the structural floor levels have a step down of no less than 40 millimetres from internal to external
 - the balcony/deck has fall to the drainage point
 - detailing is provided through threshold cross-section, indicating how waterproofing would terminate at balustrade posts.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for setting out and applying waterproofing systems for wall and floor tiling to internal and external wet areas
- types and uses of tools and equipment for applying waterproofing for wall and floor tiling

- safety requirements Standards for setting out and applying waterproofing systems for wall and floor tiling to internal and external wet areas, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - personal protective equipment (PPE)
- techniques and methods for waterproofing for wall and floor tiling
- assessment and appreciation of moisture content in substrate materials
- manufacturers' specifications for compatible substrates, waterproofing systems, tiles and tile adhesives
- characteristics and applications of:
 - adhesives
 - liquid applied:
 - water-based
 - cementitious
 - moisture-cured
 - sheet membranes:
 - butynol
 - ethylene propylene diene monomer rubber (EPDM)
 - ethylene vinyl acetate (EVA)
 - expanded polystyrene (XPS)
 - primer:
 - water based
 - epoxy
 - bond breaker/fillet materials
- construction systems and waterproofing considerations
- penetrations and outlets, and termination and flashing principles
- types and uses of materials storage and environmentally friendly waste management
- types and uses of plans, drawings and specifications for waterproofing internal and external wet areas
- requirements for different types of internal and external wet areas:
 - showers
 - laundries
 - toilets
 - bathrooms
 - balconies
- principles and considerations of water exclusion and processes for inspection and completion activities
- processes for the calculation of material requirements for applying waterproofing for wall and floor tiling
- compatible substrate and materials for waterproofing wet areas.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWP2001 Handle waterproofing materials and components

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Change to Unit Sector.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWP2001A Handle waterproofing materials.
Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely handle and store waterproofing materials and components manually and mechanically, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

It includes the preparation, handling, sorting, stacking and disposal of waterproofing products, materials and components in the application of waterproofing systems.

The unit is suitable for those with basic skills and knowledge undertaking routine waterproofing tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction waterproofing

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to handle waterproofing materials and components.	1.1 Read and interpret task work instructions and plan sequence of work. 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task. 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. 1.4 Follow handling requirements of job safety analyses and safety data sheets. 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. 1.6 Select tools and equipment, check for serviceability and report any faults. 1.7 Select materials required for the task.
2 Manually handle waterproofing materials.	2.1 Check materials and components for conformity to material schedule, plans and specifications. 2.2 Determine handling characteristics of waterproofing materials and components and apply safe and effective handling techniques. 2.3 Sort, store and position, and stack waterproofing materials and components. 2.4 Protect materials and components against physical damage and environmental impacts and store clear of traffic ways.
3 Prepare for mechanical handling of materials and components.	3.1 Prepare and position waterproofing materials and components for mechanical handling for the type of material/component and for the requirements of the equipment to be used.

- 3.2 Load, unload, move, locate and/or install materials and/or components safely with the assistance of mechanical lifting devices/hoists.
- 4 Handle and remove waste materials and clean up.
 - 4.1 Handle waste waterproofing materials and components in accordance with safety data sheets and regulatory requirements.
 - 4.2 Identify and locate hazardous material for separate handling.
 - 4.3 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.4 Use dust suppression procedures to minimise health risk to others.
 - 4.5 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations and WHS requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWP2001A Handle waterproofing materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWP2001 Handle waterproofing materials and components

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Change to Unit Sector.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWP2001A Handle waterproofing materials. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by handling all waterproofing materials and components for three different waterproofing tasks, using both manual and mechanical handling methods.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian Standards for handling waterproofing materials and components
- plans, drawings and specifications for handling waterproofing materials and components
- workplace quality requirements for handling waterproofing materials
- techniques for safely handling, moving, stacking and storing waterproofing materials and components
- safety requirements for handling waterproofing materials and components:
 - job safety analyses
 - safety data sheets for waterproofing materials
 - personal protection equipment (PPE) for handling waterproofing materials
 - use of tools and equipment for handling waterproofing materials and components:
 - manual handling equipment
 - mechanical handling equipment
 - hazard identification and risk controls associated with handling waterproofing materials and components.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWP2002 Use waterproofing tools and equipment

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Change to Unit Sector.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWP2002A Use waterproofing tools and equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely and effectively use tools and equipment in waterproofing, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit is suitable for those with basic skills and knowledge undertaking routine waterproofing tasks under the direction of more experienced workers.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction waterproofing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to use waterproofing tools and equipment.
 - 1.1 Read and interpret task instructions to use tools and equipment.
 - 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Follow requirements of job safety analyses and safety data sheets.
 - 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.

- 2 Select hand and power tools and equipment.
 - 2.1 Select tools and equipment consistent with hazard minimisation and the requirements of the task.
 - 2.2 Review manufacturers' recommendations for operating and using tools and equipment.
 - 2.3 Check tools and equipment for correct function and report any faults.
 - 2.4 Check power leads for current tags and for safety and serviceability, and report any faults.
 - 2.5 Check and maintain power tool guards following manufacturers' recommendations.
 - 2.6 Follow WHS requirements for using tools and equipment.
 - 2.7 Complete pre-operational checks, including checking lubricants and water.

- 3 Use tools and equipment and clean up.
 - 3.1 Connect safe power supply to work area.
 - 3.2 Undertake start-up and shut-down processes following manufacturers' recommendations.
 - 3.3 Use tools and equipment safely and effectively in accordance with manufacturers' recommendations and

workplace requirements.

- 3.4 Switch off tools and equipment and locate safely when not in immediate use.
- 3.5 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations and standard work practices.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWP2002A Use waterproofing tools and equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWP2002 Use waterproofing tools and equipment

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Change to Unit Sector.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWP2002A Use waterproofing tools and equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by safely and effectively selecting and using tools and equipment for the preparation of the substrate and application of waterproofing for:

- an internal wet area
- an external wet area
- a below ground level wet area
- a remedial waterproofing project.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for using waterproofing tools and equipment
- applications, limitations and methods of operation and maintenance of hand and power tools, and equipment for waterproofing tasks
- safety requirements for waterproofing tasks, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- types and uses of tools and equipment:

- angle grinders
- paint brushes and rollers
- caulking/cartridge guns
- chisels, including cold chisels
- cutting blades
- spirit, dumpy, laser and water levels
- electric drills and screwdrivers
- manual/electric hammers
- extension leads
- gas burners and torches
- measuring tapes and rules
- mixers and mixing apparatus
- moisture meters
- wet and dry film thickness gauge
- high pressure water equipment
- excavating equipment
- pumps
- heat welders
- impact drills
- injection equipment
- pumps
- compressors
- vacuum pumps
- pressure rollers
- scissors
- seam probes
- solvent applicators
- straight edges
- trowels and floats
- personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWP2004 Prepare surfaces for waterproofing application

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Addition of points 1.6 and 1.7 to the Performance Criteria. Change to Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCWP2004A Prepare surfaces for waterproofing application. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to repair and prepare different surfaces for the application of waterproofing, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

The unit is suitable for those with basic skills and knowledge undertaking routine waterproofing tasks.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction waterproofing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Plan and prepare to prepare surfaces for waterproofing application. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task. |
| | 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.4 Follow requirements of job safety analyses and safety data sheets. |
| | 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select tools and equipment, check for serviceability and report any faults. |
| | 1.7 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Prepare work area. | 2.1 Identify area to be waterproofed from plans and specifications. |
| | 2.2 Inspect and test surface to determine appropriateness of the installation and for any contaminants, moisture or incompatible materials. |
| | 2.3 Provide ventilation in accordance with safety data sheets. |
| | 2.4 Provide run-off and environmental controls to regulatory and workplace requirements. |
| | 2.5 Clean and prepare work area for the waterproofing processes to manufacturers' specifications and site requirements. |
| 3 Prepare substrate. | 3.1 Assess surface for defects and report areas of concern. |

- 3.2 Select tools to repair/prepare the surface.
 - 3.3 Determine method of repairing surface defects, consistent with type of material surface, size of defect, compatibility of materials and specified finish.
 - 3.4 Select, prepare and apply repair materials to manufacturers' specifications.
 - 3.5 Prepare substrate for water proofing system.
 - 3.6 Clean surface area of unwanted materials to provide a uniform surface.
 - 3.7 Protect surface until the application of the waterproof membrane.
- 4 Clean up.
 - 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWP2004A Prepare surfaces for waterproofing application.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCWP2004 Prepare surfaces for waterproofing application

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Addition of points 1.6 and 1.7 to the Performance Criteria. Change to Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCWP2004A Prepare surfaces for waterproofing application. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by preparing the wall and floor surfaces for each of:

- a minimum of four square metres of internal wet area
- a minimum of four square metres of external wet area
- a minimum four square metres of below ground level wet area
- a remedial waterproofing project.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for preparing surfaces for waterproofing application
- construction systems and waterproofing considerations and requirements
- safety requirements for preparing surfaces for waterproofing application, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- types and uses of plans, drawings and specifications for waterproofing application

- types and uses of tools and equipment for preparing for waterproofing application
- surfaces suitable for waterproofing application techniques
- contaminants in waterproofing processes
- levels and falls for waterproofing applications
- characteristics, compatibility and applications of waterproofing materials and adhesives
- characteristics of waterproofing preparation materials:
 - durability
 - compatibility
 - applications
 - protection requirements
- types and preparation requirements of different porous and non-porous substrates:
 - timber
 - concrete
 - masonry
 - composite boards
 - fibre cement
 - packed earth
 - metals
 - plastics.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWP3001 Apply waterproofing system to below ground level wet areas

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity. Change to Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCWP3001A Apply waterproofing process to below ground level wet areas. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to apply waterproofing system to wet areas below ground level, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

It includes identification of the appropriate waterproofing system to be used, its preparation and its application.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction waterproofing

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to apply waterproofing system to below ground level wet areas.	1.1 Read and interpret work instructions and plan sequence of work.
	1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
	1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
	1.4 Follow requirements of job safety analyses and safety data sheets.
	1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
	1.6 Check for and report substrate and/or surface defects.
	1.7 Select tools and equipment, check for serviceability and report any faults.
	1.8 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
2 Select waterproofing system.	2.1 Identify below-ground structure to be waterproofed from drawings and specifications.
	2.2 Select compatible waterproofing systems suitable for site conditions and substrate.
3 Prepare for waterproofing installation.	3.1 Confirm site access for safety and adequacy for installation.
	3.2 Set out below-ground wet area site, and check alignment and finished levels for conformity with drawings and specifications.
	3.3 Test moisture content in substrate for compatibility with system and report defects.

- 3.4 Prepare detailing and terminations and make ready for installation of system.
 - 3.5 Check that substrate has uniform finish.
 - 3.6 Clean and prepare substrate ready for waterproofing.
- 4 Apply waterproofing.
 - 4.1 Apply waterproofing system to prepared surface to manufacturers' specifications.
 - 4.2 Detail and terminate waterproofing membrane in accordance with system requirements.
 - 4.3 Check completed below-ground waterproofing installation for conformity to manufacturers' specifications.
 - 4.4 Document movement joints for subsequent trades.
 - 4.5 Perform final inspection and completion activities.
 - 4.6 Protect waterproofing membrane.
- 5 Apply sealants to construction joints.
 - 5.1 Select sealant for compatibility with application, substrate and finishes.
 - 5.2 Install backing rods and/or release agents to prevent three-sided adhesion.
 - 5.3 Apply sealant manufacturers' specifications, tool to required finish and allow to cure.
 - 5.4 Perform final inspection and completion activities.
 - 5.5 Protect sealant, in accordance with manufacturers' specifications
- 6 Clean up.
 - 6.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWP3001A Apply waterproofing process to below ground level wet areas.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWP3001 Apply waterproofing system to below ground level wet areas

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity. Change to Unit Sector.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWP3001A Apply waterproofing process to below ground level wet areas. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by applying waterproofing to below-ground wet areas, including:

- a liquid system to waterproof:
 - covering a minimum of two square metres of a masonry wall
 - with a strip or toe footing, including terminations
 - including at least one penetration and a wall-to-wall junction
- a sheet system to waterproof:
 - covering a minimum of two square metres of a masonry wall
 - with a strip or toe footing, including terminations
 - including at least one penetration and a wall-to-wall junction.

In doing this, the candidate must apply protection of the waterproofing.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for waterproofing below-ground wet areas
- safety requirements for waterproofing below-ground wet areas, including:

- job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
- safety data sheets (SDS)
- personal protective equipment (PPE)
- manufacturers' specifications for waterproofing systems and materials
- below-ground waterproofing materials, processes and techniques:
 - external and internal vertical walls constructed below ground level
 - under slab waterproofing barriers
 - foundation work
 - lift pits
 - retaining walls
- underground residential and commercial spaces:
 - basements
 - car parks
 - storage areas
- characteristics and applications of waterproofing materials:
 - liquid:
 - bituminous
 - cementitious-based
 - injection
 - polyurethane
 - sheet:
 - bentonite composites
 - butyl
 - modified bitumen sheet
 - ethylene propylene diene monomer rubber (EPDM)
 - polyvinyl chloride (PVC)
 - waterproofing materials:
 - geotech fabric
 - protection board
 - substrate primer
 - water stops
- waterproofing considerations in construction systems:
 - compatibility of systems
 - UV stability at above ground transition
 - causes of water penetration:
 - leakage through wall and floor finishes
 - penetration at joints and junctions
 - movement from shrinkage
 - accumulated drainage

- failure of or damage to waterproofing system
- corners and terminations
- curing times of compounds and their applications
- damp-proof courses and flashings
- hydrostatic pressure
- impact of environmental conditions
- joining
- perimeter treatment:
 - pressure seals cross cavity and over flashing
 - thermal shrinkage (expansion and contraction)
- shelf life of waterproofing products
- surface applications and protection requirements
- use of bond-breakers
- use of sealants
- waste allowances
- materials storage and environmentally friendly waste management
- types and uses of plans, drawings and specifications for waterproofing below-ground wet areas
- types and uses of tools and equipment for waterproofing below-ground wet areas
- drainage and protection systems
- types and uses of materials used for below ground application
- principles and considerations of water exclusion:
 - positive
 - negative
 - blind-side membrane
- quality requirements for waterproofing below-ground wet areas
- termination and detailing for waterproofing below-ground wet areas.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWP3002 Apply waterproofing process to internal wet areas

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Performance Evidence and Unit Sector.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCCWP3002A Apply waterproofing process to internal wet areas. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to apply waterproofing to internal wet areas, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

It includes identification of the appropriate waterproofing system to be used, its preparation and its application.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction waterproofing

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to apply waterproofing process to internal wet areas.	1.1 Read and interpret work instructions and plan sequence of work. 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task. 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. 1.4 Follow requirements of job safety analyses and safety data sheets. 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. 1.6 Select tools and equipment, check for serviceability and report any faults. 1.7 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use.
2 Select waterproofing system.	2.1 Locate internal structure to be waterproofed from drawings and specifications. 2.2 Check area for soundness and surface defects. 2.3 Select waterproofing systems suitable for and compatible with site conditions and substrate.
3 Prepare for waterproofing installation.	3.1 Set out internal wet area and check alignment, fixtures and finished levels for conformity with drawings and specifications, and report defects. 3.2 Test moisture content in substrate for compatibility with system and report defects. 3.3 Check adequacy of drainage and report defects.

- 3.4 Prepare flashings and termination seals and make ready for installation to manufacturers' specifications.
 - 3.5 Check that substrate has a uniform finish to manufacturers' instructions.
 - 3.6 Clean and prepare substrate ready for waterproofing.
 - 3.7 Prime substrate ready for waterproofing.
- 4 Apply waterproofing.
 - 4.1 Apply waterproofing system to prepared surface to manufacturers' specifications.
 - 4.2 Detail and terminate waterproofing membrane in accordance with system requirements.
 - 4.3 Check completed waterproofing installation for conformity to manufacturers' specifications.
 - 4.4 Document movement joints for subsequent trades.
 - 4.5 Perform final inspection and completion activities.
 - 4.6 Protect waterproofing membrane.
- 5 Apply sealants to construction joints.
 - 5.1 Select sealant for compatibility with application, substrate and finishes.
 - 5.2 Install backing rods and/or release agents to prevent three-sided adhesion.
 - 5.3 Apply sealant manufacturers' specifications, tool to required finish and allow to cure.
 - 5.4 Perform final inspection and completion activities.
 - 5.5 Protect sealant, in accordance with manufacturers' specifications.
- 6 Clean up.
 - 6.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 6.2 Clean, check, maintain and store tools and equipment in

accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCW3002A Apply waterproofing process to internal wet areas.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWP3002 Apply waterproofing process to internal wet areas

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Performance Evidence and Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCWP3002A Apply waterproofing process to internal wet areas. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by waterproofing an internal wet area, including:

- one shower area, a minimum 1800 millimetres high, 900 millimetres x 900 millimetres wide, incorporating:
 - a niche
 - tap penetrations
 - draining connection
 - water stop/hob
- surrounds for an inserted bath with periphery barrier or water stop.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for waterproofing internal wet areas
- safety requirements for waterproofing internal wet areas, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia Code of Practice for Construction Work or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
- manufacturers' specifications for waterproofing systems and materials

- assessment and appreciation of moisture content in substrate materials for waterproofing internal wet areas
- waterproofing around fixtures:
 - vanities
 - toilets
 - shower screens
 - taps
 - penetrations
- waterproofing materials, processes and systems for internal wet areas:
 - waterproofing systems/materials:
 - cementitious
 - water-based
 - moisture-cured
 - sealants
 - sprayed material membranes
 - sheet:
 - butyl
 - ethylene propylene diene monomer rubber (EPDM)
 - polyvinyl chloride (PVC)
 - decoupling
 - ancillary materials:
 - adhesives
 - sealants
 - drainage flanges
 - penetration flashings
 - water stops
- internal waterproofing materials, processes and techniques
- types and uses of materials storage and environmentally friendly waste management
- types and uses of plans, drawings and specifications for waterproofing internal wet areas
- types and uses of tools and equipment for waterproofing internal wet areas
- principles and considerations of water exclusion
- processes for the calculation of material requirements for waterproofing internal wet areas
- quality requirements for waterproofing internal wet areas
- termination and flashing principles.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWP3003 Apply waterproofing process to external above-ground wet areas

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCWP3003A Apply waterproofing process to external wet areas. Change to title. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to apply waterproofing to external above-ground wet areas, meeting all relevant requirements of Australian Standards, work health and safety (WHS) requirements, and Commonwealth and state or territory legislation.

It includes identification of the appropriate waterproofing system to be used, its preparation and its application.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction waterproofing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Plan and prepare to apply waterproofing process to external above-ground wet areas. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task. |
| | 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | 1.4 Follow requirements of job safety analyses and safety data sheets. |
| | 1.5 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.6 Select tools and equipment, check for serviceability and report any faults. |
| | 1.7 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Select waterproofing system. | 2.1 Locate external above-ground area to be waterproofed from drawings and specifications. |
| | 2.2 Check area for soundness and surface defects. |
| | 2.3 Select waterproofing systems suitable for and compatible with site conditions and substrate. |
| 3 Prepare for waterproofing installation. | 3.1 Set out above-ground external wet area and check alignment, fixtures and finished levels for conformity with drawings and specifications, and report defects. |
| | 3.2 Test moisture content in substrate for compatibility with system and report defects. |
| | 3.3 Check adequacy of drainage and report defects. |

- 3.4 Prepare flashings and termination seals and make ready for installation to manufacturers' specifications.
 - 3.5 Check that substrate has a uniform finish to manufacturers' instructions.
 - 3.6 Clean and prepare substrate ready for waterproofing and sealant.
 - 3.7 Prime substrate ready for waterproofing and sealant.
 - 4 Apply waterproofing.
 - 4.1 Apply waterproofing system to prepared surface to manufacturers' specifications.
 - 4.2 Detail and terminate waterproofing membrane in accordance with system requirements.
 - 4.3 Check completed waterproofing installation for conformity to manufacturers' specifications.
 - 4.4 Document movement joints for subsequent trades.
 - 4.5 Perform final inspection and completion activities.
 - 4.6 Protect waterproofing membrane.
 - 5 Apply sealants to construction joints.
 - 5.1 Select sealant for compatibility with application, substrate and finishes.
 - 5.2 Install backing rods and/or release agents to prevent three-sided adhesion.
 - 5.3 Apply sealant manufacturers' specifications, tool to required finish and allow to cure.
 - 5.4 Perform final inspection and completion activities.
 - 5.5 Protect sealant, in accordance with manufacturers' specifications.
 - 6 Clean up.
 - 6.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.

- 6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCW3003A Apply waterproofing process to external wet areas.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWP3003 Apply waterproofing process to external above-ground wet areas

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCWP3003A Apply waterproofing process to external wet areas. Change to title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

- waterproofing:
 - a minimum four square metres of a balcony/deck:
 - where the structural floor levels have a step down of no less than 40 millimetres from internal to external
 - the balcony/deck has fall to the drainage point
 - detailing is provided through threshold cross-section, indicating how waterproofing would terminate at balustrade posts
 - a minimum 600 millimetres x 600 millimetres x 300 millimetres high planter box
- installing sealant to a minimum 900 millimetres long x 25 millimetres wide external above-ground construction joint for waterproofing.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for waterproofing above-ground external wet areas
- safety requirements for waterproofing above-ground external wet areas, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia Code of Practice for Construction Work or state and/or territory equivalent

- safety data sheets (SDS)
- personal protective equipment (PPE)
- manufacturers' specifications for waterproofing systems and materials
- waterproofing around fixtures:
 - balustrades
 - posts
 - service penetrations
 - drainage angles and drip moulds
 - skylights
- assessment and appreciation of moisture content in substrate materials for waterproofing above-ground external wet areas
- waterproofing materials, processes and systems for external wet areas:
 - waterproofing systems/materials:
 - water-based
 - cementitious
 - moisture-cured
 - sprayed material membranes
 - sheet:
 - butyl
 - ethylene propylene diene monomer rubber (EPDM)
 - polyvinyl chloride (PVC)
 - decoupling
 - ancillary materials:
 - adhesives
 - drainage cell
 - geotech fabric
 - protection board
 - sealants
 - drainage flanges
 - penetration flashings
 - water stops
- application of sealants:
 - silicons
 - polyurethanes
 - modified silanes
 - SPUR
- methods for avoiding three-sided adhesion:
 - backing rods
 - release tapes

- characteristics and applications of waterproofing materials and adhesives for above-ground external wet areas
- construction systems and waterproofing considerations for external above-ground wet areas:
 - compatibility of systems
 - design principles
 - drainage requirements
 - hydrostatic pressures
 - structural movement
 - substrate type and condition
 - environmental factors:
 - substrate
 - materials
 - ambient temperatures
 - allowing water flow
 - slope, fall and grade of surfaces
 - water run-off and impact on adjoining property
 - waterproofing protection
- types and uses of materials storage and environmentally friendly waste management
- types and uses of plans, drawings and specifications for waterproofing above-ground external wet areas
- types and uses of tools and equipment for waterproofing external above-ground wet areas
- principles and considerations of water exclusion
- processes for the calculation of material requirements for waterproofing external above-ground wet areas
- quality requirements for waterproofing external above-ground wet areas
- termination, cross cavity and overflashing requirements
- testing procedures for waterproof membrane systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWP3004 Apply waterproofing remedial processes

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCWP3004A Apply waterproofing remedial processes. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to apply remedial waterproofing processes to wet areas, meeting all relevant requirements of Australian Standards, work health and safety (WHS) requirements, and Commonwealth and state or territory legislation.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction waterproofing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to apply waterproofing remedial processes.
 - 1.1 Read and interpret work instructions and plan sequence of work.
 - 1.2 Select and use personal protective equipment (PPE) as required for each stage of the task.
 - 1.3 Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications.
 - 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.
 - 1.5 Select tools and equipment, check for serviceability and report any faults.

- 2 Select waterproofing remedial process and techniques.
 - 2.1 Inspect and analyse defect that requires application of waterproofing remedial processes.
 - 2.2 Select techniques and materials for the waterproofing remedial process in accordance with manufacturers' specifications.

- 3 Apply waterproofing remedial process and techniques.
 - 3.1 Prepare materials for remedial process to manufacturers' recommendations.
 - 3.2 Prepare and set up application equipment.
 - 3.3 Prepare substrate for application.
 - 3.4 Apply remedial waterproofing process to manufacturers' recommendations.
 - 3.5 Perform tests to confirm effectiveness of repair.

- 4 Clean up.
 - 4.1 Clear work area, dispose of materials, and reuse or recycle in compliance with legislation, regulations and codes of practice.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' recommendations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWP3004A Apply waterproofing remedial processes.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWP3004 Apply waterproofing remedial processes

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCCWP3004A Apply waterproofing remedial processes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by:

- analysing defects that require application of waterproofing remedial systems in each of the following:
 - a crack in concrete or masonry of a minimum 900 millimetres
 - a cracked concrete or masonry floor/wall junction of a minimum 900 millimetres
 - rising damp in a minimum 900 millimetre length of concrete/masonry wall
 - a live leak in concrete or masonry
 - a damaged waterproofing membrane
- selecting waterproofing remedial techniques for each of the above waterproofing remedial processes
- repairing a minimum of two of the above defects using at least three different remedial waterproofing techniques.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for applying waterproofing remedial processes
- safety requirements for applying waterproofing remedial processes, including:

- job safety analyses and/or safe work method statements in accordance with Safe Work Australia Code of Practice for Construction Work or state and/or territory equivalent
- safety data sheets (SDS)
- personal protective equipment (PPE)
- tests of effectiveness of remedial waterproofing:
 - water test
 - flood test
 - moisture readings
 - thermal survey
 - visual inspection
- manufacturers' specifications for waterproofing systems and materials
- remedial waterproofing techniques:
 - remedial injection epoxies or urethanes
 - hydraulic plug or seals
 - cement crystallisation or hydrostatic coating methods
 - concrete repair systems
 - damp-proof course injections
 - application of densifiers
 - remediation to damaged membrane systems
- characteristics and applications of remedial waterproofing materials:
 - cementitious products
 - epoxies
 - expanding polyurethane foam
 - polyurethane resin systems
 - silicon, silane and siloxane products
 - single and dual component resins
- construction systems and waterproofing considerations:
 - barriers to stop rising damp
 - concrete crystallisation/injection
 - concrete repair injection hydrostatic barrier coatings
 - membranes
 - saturants on an external wall (in case of flood)
- types and uses of materials storage and environmentally friendly waste management
- technical specifications for applying waterproofing remediation
- types and uses of tools and equipment
- principles and considerations of water exclusion
- quality requirements for waterproofing remediation.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWP3005 Assess construction waterproofing processes

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Change to Unit Sector.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCWP2003A Prepare for construction waterproofing process. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to assess waterproofing to differing types of wet areas in varying building situations, meeting all relevant requirements of Australian Standards, work health and safety (WHS), and Commonwealth and state or territory legislation.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction waterproofing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|--|-----|---|
| 1 | Plan and prepare to assess construction waterproofing process. | 1.1 | Read and interpret work instructions. |
| | | 1.2 | Select and use personal protective equipment (PPE). |
| | | 1.3 | Plan all work to comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, workplace requirements, drawings and specifications. |
| | | 1.4 | Follow requirements of job safety analyses and safety data sheets. |
| 2 | Assess waterproofing processes and materials. | 2.1 | Assess selected waterproofing system for installation technique, product suitability, compatibility with substrate and required finishes, and conformity to codes and specifications. |
| | | 2.2 | Assess potential for water penetration, consequences of water penetration, and methods of water exclusion. |
| | | 2.3 | Determine method for installation of waterproofing. |
| | | 2.4 | Determine potential faults, contingencies and mitigation activities. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCWP2003A Prepare for construction waterproofing process

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCWP3005 Assess construction waterproofing processes

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Unit Sector.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCWP2003A Prepare for construction waterproofing process. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must satisfy all of the elements, performance criteria and foundation skills of this unit by assessing construction waterproofing processes for each of the following:

- an internal wet area
- an external wet area
- a below ground level wet area
- a remedial waterproofing project.

All work must be performed to the standard required in the workplace and must comply with laws and regulations, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- requirements of Australian Standards for assessing and preparing for construction waterproofing process
- safety requirements relevant to handling wall and floor tiling materials, including:
 - job safety analyses and/or safe work method statements in accordance with Safe Work Australia *Code of Practice for Construction Work* or state and/or territory equivalent
 - safety data sheets (SDS)
 - personal protective equipment (PPE)
 - handling of hazardous materials
- characteristics and applications of waterproofing materials and adhesives

- construction systems and waterproofing considerations and requirements
- types and uses of materials storage and environmentally-friendly waste management
- types and uses of plans, drawings and specifications for construction waterproofing
- types and uses of tools and equipment for construction waterproofing
- preparation for waterproofing processes and waterproofing techniques
- principles and considerations of water exclusion
- quality requirements for construction waterproofing
- waterproofing process materials:
 - durability
 - compatibility
 - applications
 - protection requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCMCM8001 Plan and manage complex projects

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 1.

Replaces superseded equivalent CPCMCM7001A Plan and manage complex projects.

Application

This unit of competency specifies the outcomes required to identify, plan, control and finalise complex projects.

The unit addresses the management of projects of significant scope and duration, for example developing and implementing a major new program or service, or constructing or designing a significant new piece of infrastructure.

The environment in which the project is managed is also complex and involves managing a project team which typically includes staff with diverse skill sets. Managing complex projects also involves significant reporting requirements.

This unit supports the attainment of skills and knowledge required for competent workplace performance in organisations of all sizes. It will support senior managers in all sectors of the construction industry who must exercise the skills needed to ensure projects are planned and managed effectively in order to deliver the required outcomes on time and within budget.

The unit may be contextualised to suit the strategic context in which the unit is applied, which may be across all sectors in the construction industry provided the essential outcomes of the unit are not changed.

No licensing, legislative, accreditation, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Management

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- | | |
|---|--|
| 1. Identify strategic and operational needs of the project during planning phase. | <ul style="list-style-type: none"> 1.1. Project's strategic context and operational requirements are identified and analysed. 1.2. Organisation's strategic and business plans and their output requirements are identified and analysed. 1.3. Client requirements and impact of <i>legislation and industry codes and standards</i> are identified and fully explored. 1.4. <i>Risk management analysis</i> is conducted and risk management plan is developed and documented. |
| 2. Prepare project plan. | <ul style="list-style-type: none"> 2.1. Precise <i>specifications and terms of reference</i> for the project are defined and documented. 2.2. Project budget is developed, specified to a level that can be used for managing sub-tasks, and documented. 2.3. Skills needed for successful completion of project are defined. 2.4. Physical and other resources required to support project are defined and documented and processes to secure them are commenced. 2.5. Timelines, schedules and critical path for the project are developed and documented, taking into consideration contingencies and time slippages. |

- 2.6. Reporting and communication strategy or process is defined and documented.
3. Assemble project team and commence work.
 - 3.1. Appropriate project team members are secured and briefed regarding the project, their roles, levels of delegated responsibility, and outcomes to be achieved.
 - 3.2. Communication processes are put in place to coordinate work and inform team members of progress.
 - 3.3. Clear reporting processes for team members are communicated.
4. Manage project.
 - 4.1. Project progress is monitored according to project plan requirements, using appropriate *project management tools* and methodologies.
 - 4.2. Team members are supported and their output is managed against key performance indicators identified in project plan.
 - 4.3. Corrections, changes and additions are made to project plan in light of changing circumstances to ensure project aims and outcomes are met.
 - 4.4. Resourcing to support project is monitored and corrections are made to reflect changing circumstances.
 - 4.5. Reporting of overall project progress is made to senior management or client as required and in line with project plan.
5. Finalise project.
 - 5.1. Required handover to staff members responsible for ongoing implementation or maintenance of project products or services is conducted efficiently, effectively and in line with organisational procedures.
 - 5.2. Project team members and relevant stakeholders are debriefed about conduct of project and outcomes achieved.
 - 5.3. Report is prepared analysing strengths and weaknesses of project plan and conduct of project.

6. Use project to improve future processes.
- 6.1. Learning outcomes are identified and analysed to inform future complex projects.
- 6.2. Strategic impact of project is considered and fed into the organisation's ongoing strategic planning processes.

Foundation Skills

This section describes core skills that are essential to performance and not explicit in the performance criteria. Employment skills essential to performance are explicit in the performance criteria of this unit of competency.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none">engage in processes designed to research and update own knowledge of products, software systems and technology used in managing complex projectsreflect on and critically analyse experiences of planning and managing complex projects to determine training and development required to improve future performance of self, others and the organisation.
Numeracy skills to:	<ul style="list-style-type: none">represent and monitor projected resource costs in the form of budgets over the life of a complex projectestimate, monitor and manage the allocation of own time on project tasks and supervise the use of others' time to allocated project tasks.
Oral communication skills to:	<ul style="list-style-type: none">liaise with clients and other stakeholders on project progress using appropriate vocabulary and technical terminology.
Reading skills to:	<ul style="list-style-type: none">interpret and engage in analysis of documentation, including legislation, drawings, plans and specifications.
Writing skills to:	<ul style="list-style-type: none">organise and present data in reports and strategy documents that respond to complex project requirements and include project plans and communication strategies involving analysis and recommendations.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Legislation and industry codes and standards must include:

- Australian and international standards applicable to the project
- building Acts and regulations
- infrastructure supply regulations
- National Construction Code.

Risk management analysis must include:

- analysing potential for workers' compensation claims
- assessing public liability requirements
- establishing or confirming business continuity plans
- considering changing government policy or funding arrangements
- identifying environmental obligations
- identifying and mitigating work health and safety risks
- identifying property development and maintenance requirements.

Specifications and terms of reference must include:

- defining project aims
- describing outcomes to be achieved using clear metrics
- describing all stakeholders
- describing project parameters and scope of operations.

Project management tools must include:

- critical path analysis
- Gantt or PERT charts or other industry-accepted project management tools
- in-house or proprietary software
- scheduling and reporting templates.

Unit Mapping Information

CPCMCM7001A Plan and manage complex projects

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCMCM8001 Plan and manage complex projects

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 1.

Replaces superseded equivalent CPCMCM7001A Plan and manage complex projects.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must successfully design, implement, manage and finalise two complex projects.

For each project, the person must produce a detailed project plan outlining a process and methodology for the planning, scheduling and sourcing of human and other resources. Each plan must also:

- specify how the project team members will be resourced, assembled and briefed on roles, responsibilities and deliverables
- outline processes for managing and communicating with a team of diverse skills and roles, including:
 - architects
 - lead contractors
 - mechanical engineers
 - hydraulic engineers
 - electrical engineers
- specify a process for project reporting that details frequency and format of reports
- ensure the project aligns to and supports organisational strategies and requirements.

For each project, the person must identify:

- at least one key learning outcome from the project
- where this learning could refine and improve future complex project management processes.

Knowledge Evidence

A person demonstrating competency in this unit must be able to demonstrate knowledge of:

- processes and practices involved in developing budgets
- principles of team leadership and human resource management relating to managing others working on a complex project
- processes involved in risk management, risk analysis and planning
- legislation, codes and standards relevant to the specific project:
 - Australian standards
 - building Acts and regulations
 - infrastructure supply regulations
 - international standards
 - the National Construction Code
- reporting mechanisms relevant to updating and informing clients and other stakeholders of project progress
- roles and responsibilities of relevant building project personnel
- sustainability requirements relevant to the project:
 - energy conservation
 - water conservation
- tools and models of project management used in managing complex construction projects.

Assessment Conditions

Assessment must be conducted in the workplace or a close simulation of the workplace.

Suitable assessment of performance would require:

- equipment:
 - computer with internet and email access
 - proprietary software with spreadsheet and word processing functionality and project management capabilities
- materials:
 - current legislation, codes and standards relevant to the specific project and the jurisdiction in which the project work is taking place, including:
 - building Acts and regulations
 - infrastructure supply regulations
 - Australian standards
 - international standards
 - project documentation, including design or project briefs, drawings, specifications, construction schedules and other supporting documents
 - research resources, including product information and data.

Assessor requirements

Assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCMCM8002 Manage the quality of projects and processes

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 1.

Replaces superseded equivalent CPCMCM7002A Manage the quality of projects and processes.

Application

This unit of competency specifies the outcomes required to establish performance measures of projects and processes, and review and improve their management and accountability.

The unit covers the need for quality control and responsibility for providing service outcomes to customers. Managing organisational change is a major focus of the unit.

This unit supports the attainment of skills and knowledge required for competent workplace performance in organisations of all sizes. It will support senior managers with responsibility in all sectors.

The unit may be contextualised to the specific needs and knowledge and skill requirements of all industries, provided the essential outcomes of the unit are not changed.

No licensing, legislative, accreditation, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Management

Unit Sector

Common

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- | | | |
|----|--|---|
| 1. | Establish parameters for delivery of a quality project or process. | <p>1.1. <i>Concepts, principles and tools of quality management and continuous improvement</i> are researched and analysed.</p> <p>1.2. Extensive research is undertaken to determine current and future service requirements of customers.</p> <p>1.3. Recommended or anticipated changes to services and their processes are communicated to senior management for review and negotiated with stakeholders.</p> |
| 2. | Establish and implement performance measurement strategies. | <p>2.1. Financial and <i>non-financial performance indicators</i> and evaluation criteria for specific project are established and agreed upon with relevant stakeholders and communicated to relevant staff and service providers.</p> <p>2.2. Appropriate financial and non-financial benchmarks are determined and agreed to with relevant stakeholders.</p> <p>2.3. Project and services are monitored to ensure they meet identified needs and service expectations.</p> <p>2.4. Feedback from customers is communicated to relevant areas in the organisation and incorporated into performance reviews.</p> <p>2.5. Trends in <i>customer or stakeholder satisfaction</i> and service use are monitored to identify opportunities for improvements to services or processes.</p> <p>2.6. Issues of responsiveness and accessibility are reviewed and reported.</p> |
| 3. | Facilitate | <p>3.1. Project management systems, <i>reporting mechanisms</i></p> |

- accountability for project and service outcomes.
- and processes are established and communicated to staff and service providers.
- 3.2. Results of service reviews against desired targets are reported according to standard organisational procedures.
- 3.3. Tenders and contracted works are regularly monitored and adverse variations in established performance targets are immediately addressed.
- 3.4. Quality and efficiency of operational processes are measured and documented.
- 3.5. Service shortfalls are analysed and resolved in line with organisational policies and procedures, including customer service standards.
4. Develop and implement change management processes.
- 4.1. Need for change in organisational processes and work culture to support project or service delivery is identified.
- 4.2. Change process to address the need is identified, developed and implemented.
- 4.3. Staff members are informed of implemented changes and provided with training, coaching and other assistance as required.
- 4.4. Appropriate methods are employed to gain commitment for change.
- 4.5. Effectiveness and benefits of implemented changes are monitored and reported.
- 4.6. Outcomes of improvements are reviewed and shared across the organisation to support further learning and continuous improvement.

Foundation Skills

This section describes core skills that are essential to performance and not explicit in the performance criteria. Employment skills essential to performance are explicit in the performance criteria of this unit of competency.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • attempt complex tasks requiring sophisticated conceptualisation and analysis and employ lateral thinking and problem solving strategies • use formal approaches to critically reflect, gain insights and learn from project outcomes, refine and improve future processes, and consider and respond to performance feedback from stakeholders.
Numeracy skills to:	<ul style="list-style-type: none"> • extract, interpret and comprehend a range of mathematical information to calculate benchmarks, analyse financial reports, and monitor the performance of the project or process.
Oral communication skills to:	<ul style="list-style-type: none"> • liaise with management and other stakeholders on project progress using appropriate vocabulary.
Reading skills to:	<ul style="list-style-type: none"> • synthesise and critically evaluate information from a range of sometimes complex sources, including organisational systems, processes and activities to support the implementation of a quality project or process.
Writing skills to:	<ul style="list-style-type: none"> • collate and organise data to produce reports on customer service review and implementation success.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<p><i>Concepts, principles and tools of quality management and continuous improvement</i> must include at least one of the following:</p>	<ul style="list-style-type: none"> • benchmarking • continuous improvement methodologies • failure mode and effects analysis • ISO 9000 Quality Management Systems and processes for certification • lean transformation processes • total quality management.
<p><i>Non-financial</i></p>	<ul style="list-style-type: none"> • completion times for projects measured against project plans

performance indicators must include at least two of the following:

- customer satisfaction ratings
- demonstrated compliance of work with codes and standards
- industry awards received
- number of business referrals
- performance in industry benchmarking studies
- volume of repeat business.

Methods of measuring **customer or stakeholder satisfaction** must include:

- gap analysis approach
- customer satisfaction monitoring approach, such as:
 - questionnaires
 - face-to-face interviews
- customer-focused key performance indicators.

Reporting mechanisms must include:

- financial and non-financial system reports, including budgets
- informal reporting methods, including:
 - regular team meetings
 - departmental meetings.

Unit Mapping Information

CPCMCM7002A Manage the quality of projects and processes

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCMC8002 Manage the quality of projects and processes

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 1.

Replaces superseded equivalent CPCMC7002A Manage the quality of projects and processes.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must manage the development and delivery of two projects:

- one project requiring the person to review a proposed new process in an organisation or department
- one project requiring the person to oversee the development and delivery of quality outcomes.

For each project, the person must:

- provide a detailed overview of the project and identify a set of performance measures and evaluation criteria for the project
- select or develop appropriate reporting mechanisms which will assist in identifying project progress against agreed quality and service levels
- develop strategies to communicate the change to stakeholders
- monitor project progress against agreed performance measures and evaluation criteria
- outline key learning outcomes from the project that will enhance or contribute to the implementation of future projects.

For each project the person must also develop a change management process that identifies:

- changes to be introduced
- key stakeholders who will be affected by the change
- a communication strategy for informing all stakeholders throughout the implementation phases of the project
- strategies for training or mentoring stakeholders during the implementation phases of the project.

Knowledge Evidence

A person demonstrating competency in this unit must be able to demonstrate knowledge of:

- principles of change management processes and their application
- principles of quality management and continuous improvement processes
- organisational policies and procedures:
 - customer service standards
 - procedures for reporting on review of services
- functions and limitations of relevant project management software.

Assessment Conditions

Assessment must be conducted in the workplace or a close simulation of the workplace.

Suitable assessment of performance would require:

- equipment:
 - computer with internet and email access
 - software that enables the development of spreadsheets and word processing
- materials:
 - project documentation, including project briefs, drawings, specifications, construction schedules and other relevant supporting documentation.

Assessor requirements

Assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2039 Carry out interactive workplace communication

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2039A Carry out interactive workplace communication. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to carry out effective communication techniques underpinning work in the plumbing and services industry.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan workplace communication.	1.1 Identify information and/or instructions to be communicated and received.
	1.2 Identify workplace context and personnel with whom to communicate.
	1.3 Identify and select suitable forms of communication and method(s) for workplace context.
2 Apply oral	2.1 Communicate clearly and orally using language and

- communication. method consistent with workplace context and procedures.
- 2.2 Adjust oral communication delivery where intent of communication was not received correctly.
- 2.3 Confirm communication is received by recipient as intended.
- 3 Apply non-verbal communication.
- 3.1 Communicate non-verbally using body language and gestures consistent with workplace context and procedures.
- 3.2 Adjust non-verbal communication delivery where intent of communication was not received correctly.
- 3.3 Use visual communication that follows accepted industry practice or social convention in accordance with workplace context and procedures.
- 3.4 Confirm communications are received by recipient as intended.
- 4 Use written communication.
- 4.1 Identify workplace activities requiring written communication to be applied.
- 4.2 Read and interpret workplace information or requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
- 4.3 Identify and apply regulatory and work activity signage in accordance with workplace procedures.
- 4.4 Complete regulatory authorities' and workplace documentation in accordance with workplace procedures.
- 4.5 Record and report work activities in accordance with workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2039A Carry out interactive workplace communication.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2039 Carry out interactive workplace communication

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2039A Carry out interactive workplace communication. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- communicating with others orally and non-verbally in a clear and accurate manner
- reading and interpreting workplace procedures, job instructions, job processes and equipment and operator instructions
- applying work activity signage in accordance with regulatory and workplace requirements
- completing regulatory and workplace documentation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- types of communication
- non-verbal communication
- standardised signage
- visual signalling procedures
- types of workplace documentation
- how instructions are conveyed in the workplace
- how work schedules, charts, bulletins and memos are used
- industry-relevant technology to support oral communication
- industry terminology
- job safety analyses (JSAs) and safe work method statements (SWMSs).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2040 Read plans, calculate quantities and mark out materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPCM2040A Read plans and calculate plumbing quantities, and CPCPCM2050A Mark out materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to read and interpret construction and plumbing plans and specifications and obtain dimensions to calculate material quantities and mark out materials.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3024 Prepare simple drawings

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------|--|
| 1 Establish job requirements. | 1.1 Access, read and determine requirements from plumbing plans and specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. |
|-------------------------------|--|

- 1.2 Obtain, interpret and follow organisational work health and safety (WHS) and environmental requirements.
 - 1.3 Identify amendments to ensure plans and specifications are the most current version.
 - 1.4 Confirm drawing conventions used and their application.
 - 1.5 Select appropriate tools and equipment.
 - 1.6 Determine type of materials.
 - 1.7 Calculate dimensions and material quantities.
 - 1.8 Document materials list to workplace requirements.
- 2 Mark out job.
- 2.1 Read and determine job dimensions from relevant plans and specifications.
 - 2.2 Mark out materials using appropriate marking tools.
 - 2.3 Check markings for accuracy and compliance with planned dimensions.
- 3 Clean up.
- 3.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state/territory legislation and workplace policies and procedures.
 - 3.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPCM2040A Read plans and calculate plumbing quantities, and CPCPCM2050A Mark out materials.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2040 Read plans, calculate quantities and mark out materials

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPCM2040A Read plans and calculate plumbing quantities, and CPCPCM2050A Mark out materials.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by referring to plans and specifications for at least three different plumbing or plumbing services tasks to:

- develop a full materials and specifications list, including lengths, diameters and quantities
- transfer requirements from the plans to accurately mark out materials.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types of plans and their purpose
- parts of a plan and their function
- conventions and scales used in plans and specifications
- calculation principles used in the plumbing sector:
 - converting millimetres to metres
 - converting metres to millimetres
 - length
 - perimeter
 - circumference
 - area
 - volume
 - pressure
 - addition, subtraction, multiplication and division
 - ratio
 - percentage
- how to access relevant information, including codes and standards

- tools, materials and equipment used to read plans, calculate quantities and mark out materials
- work health and safety (WHS) requirements for reading plans, calculating quantities and marking out materials.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2041 Work effectively in the plumbing services sector

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2041A Work effectively in the plumbing services sector. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to comply with effective workplace performance within the plumbing and services sector.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Comply with work requirements.	1.1 Identify plumbing and services sector employment conditions, responsibilities and obligations.
	1.2 Access the requirements of relevant plumbing legislation, regulations, standards and codes of practice through a variety of mediums.
	1.3 Participate in identifying and pursuing own development needs and processes.
	1.4 Follow and apply the specific work health and safety (WHS) requirements of the plumbing industry when

- preparing for and undertaking work activities.
- 1.5 Follow and apply workplace quality assurance and sustainability principles and concept requirements.
- 2 Work in a team.
- 2.1 Identify workplace goals and contributions to be made by teams.
- 2.2 Identify and agree on individual contributions to teamwork activities.
- 2.3 Organise and accept responsibility for own workload.
- 2.4 Complete work activities to the standard expected in the workplace.
- 2.5 Report safety risks in the work area based on identified hazards to designated personnel.
- 2.6 Review team activities periodically with the team according to workplace procedures.
- 2.7 Implement team activity review findings to facilitate effective work practices.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2041A Work effectively in the plumbing services sector.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2041 Work effectively in the plumbing services sector

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2041A Work effectively in the plumbing services sector. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- complying with relevant work health and safety (WHS) requirements
- identifying relevant standards and industry codes of practice in the plumbing services sector
- applying the relevant regulatory requirements within the plumbing services industry
- working collaboratively as part of the plumbing services workplace processes
- identifying actions to manage workplace and personal conflict situations.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- basic job and skill analysis techniques
- workplace meeting procedures
- plumbing and services streams and career structure and requirements, including business opportunities and requirements
- regulatory and legislative standards and codes of conduct pertaining to the plumbing services sector
- relevant industrial awards and agreements
- relevant legislative provisions covering discrimination and equal employment opportunity
- site and teamwork structure and methods
- important contribution of the plumbing and services sector to public health and safety
- employment awards and conditions and their source
- types of workplace codes of conduct
- safe work practices in a normal working environment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2043 Carry out WHS requirements

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM2043A Carry out WHS requirements. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to carry out work health and safety (WHS) requirements in a plumbing and services work environment.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Participate in workplace induction procedures. | 1.1 Familiarise self on workplace induction procedures. |
| | 1.2 Identify location of emergency equipment, designated personnel and current workplace emergency and evacuation procedures. |

- 2 Plan and prepare for safe work practices.
 - 2.1 Identify and apply safe work practices when preparing for and undertaking work process.
 - 2.2 Select personal protective equipment (PPE) and ensure it is correctly fitted and used according to the requirements of the job.
 - 2.3 Select tools and equipment consistent with safe work requirements and check for serviceability, reporting any faults.
 - 2.4 Determine and erect required barricades, hoardings and signage at job location where required.
 - 2.5 Identify and apply relevant safety data sheets (SDSs), job safety analyses (JSAs), safe work method statements (SWMSs) and standard operating procedures (SOPs).

- 3 Identify and assess risks.
 - 3.1 Identify, assess and report hazards in the work area to designated personnel.
 - 3.2 Report safety risks in the work area based on identified hazards to designated personnel.
 - 3.3 Follow safe work practices, duty of care requirements and safe work instructions for controlling risks.
 - 3.4 Contribute to WHS, hazard, accident or incident reports in accordance with workplace procedures, Australian government and state/territory WHS legislation, and relevant information.

- 4 Identify hazardous materials and other hazards on work sites.
 - 4.1 Identify and apply appropriate procedures to handle and use hazardous materials on a work site in accordance with legislative requirements and workplace policies and procedures.
 - 4.2 Apply measures for controlling risks and construction hazards effectively and immediately.
 - 4.3 Use appropriate signs and symbols to secure hazardous materials that have safety implications for self and other workers immediately after they are identified.

- 5 Apply safe work practices.
- 5.1 Carry out tasks in a manner that is safe for operators, other personnel and the general community, in accordance with legislative requirements and workplace policies and procedures.
 - 5.2 Use fit-for-purpose tools, plant and equipment in accordance with manufacturers' specifications, work site regulations and Australian Standards.
 - 5.3 Follow procedures and report any hazards, incidents and injuries to designated personnel.
 - 5.4 Identify and follow requirements of work site safety signs and symbols.
 - 5.5 Clear and maintain work site area to prevent and protect self and others from incidents and accidents and to meet environmental requirements.
 - 5.6 Follow workplace emergency procedures where required.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2043A Carry out WHS requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2043 Carry out WHS requirements

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM2043A Carry out WHS requirements. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- applying work health and safety (WHS) requirements, policies and procedures on three separate and different occasions in the plumbing and services work environment.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- procedures and policies for identifying and reporting hazards, safety risks and hazardous materials, including asbestos and silica in the workplace
- job safety analyses (JSAs) and safe work method statements (SWMSs)
- safe manual handling techniques
- purpose and application of safety data sheets (SDSs) when working with different materials
- relevant legislation, regulations and workplace requirements relating to WHS, including hazard reduction and personal safety
- the requirements for working in confined spaces
- the requirements for working at heights, including on roofs
- electrical safety requirements, including but not limited to:
 - tag and test
 - residual current devices
 - equipotential (electrical) bonding
 - electrical earthing
- risk assessment processes
- safe work practices in a normal working environment:

- handling of materials
- hand tools
- power tools
- hazard control procedures and procedures for handling hazardous materials and substances
- personal protective equipment (PPE) prescribed under legislation, regulations and workplace policies and practices
- selection and use of firefighting equipment
- first aid procedures
- workplace induction requirements
- workplace response to emergencies.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2045 Handle and store plumbing materials

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to the Application.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM2045A Handle and store plumbing materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to safely handle and store plumbing materials and identify and address environmental concerns and associated hazards, including the disposal of waste.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Obtain, interpret and apply workplace, work health and safety (WHS), environmental and waste management requirements. |
| | 1.2 Select tools and equipment for handling and storing materials, goods and non-hazardous waste and liquids consistent with safe work requirements. |

- 1.3 Check serviceability of selected tools and equipment and report any faults.
 - 1.4 Select personal protective equipment (PPE) and ensure it is correctly fitted and used according to the requirements of the job.
- 2 Manage storage of materials.
 - 2.1 Identify and store materials clear of traffic ways, for ease of identification and retrieval and prevention of damage and cross-contamination according to legislative, manufacturer's specifications and workplace requirements.
 - 2.2 Erect signage and barricades to isolate stored materials from workplace traffic or access.
- 3 Store and transport materials.
 - 3.1 Store and transport materials safely according to safety data sheets (SDS) and statutory and regulatory authorities' requirements.
 - 3.2 Identify hazardous material for separate storage and transport including appropriate signage, markings and safety precautions.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of spilt liquids and waste material and reuse or recycle materials in accordance with environmental and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.
 - 4.3 Record and report relevant safety information in accordance with workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2045A Handle and store plumbing materials.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2045 Handle and store plumbing materials

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to the Application.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM2045A Handle and store plumbing materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- applying workplace procedures for the storing and stacking of materials, components, non-hazardous liquids, and flammable liquids and materials in a workshop or worksite
- arranging vehicle for the carriage of plumbing materials.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- categories of materials and their safe handling, storage and transport requirements
- air and water contamination
- job safety analyses (JSAs) and safe work method statements (SWMSs)
- purpose and application of safety data sheets (SDSs) when working with different materials
- work health and safety (WHS) and environmental requirements
- workplace hazard reporting and hazard handling procedures
- workplace response to emergencies.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2046 Use plumbing hand and power tools

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPCM2046A Use plumbing hand and power tools. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to use commonly used hand and power tools in plumbing work applications.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|--|-----|---|
| 1 Prepare to use hand and power tools. | 1.1 | Identify, obtain and interpret organisational work health and safety (WHS) and environmental requirements. |
| | 1.2 | Identify power sources and access to power supply. |
| | 1.3 | Select appropriate personal protective equipment (PPE) and ensure it is correctly fitted and used according to the requirements of the job. |
| | 1.4 | Identify electrical safety requirements. |

- 2 Use hand tools for work.
 - 2.1 Check hand tools for serviceability and safety and report any faults to supervisor according to workplace requirements.
 - 2.2 Select hand tools consistent with the needs of the job.
 - 2.3 Select relevant equipment to secure, position or support material for hand tool application.
 - 2.4 Use hand tools safely and effectively for the application according to manufacturer's specifications and workplace procedures.
 - 2.5 Position and secure relevant material for hand tool application.
- 3 Use power tools for work.
 - 3.1 Select power tools consistent with the needs of the job according to workplace procedures.
 - 3.2 Check power tools for tags, serviceability and safety according to WHS requirements and report any faults to supervisor according to workplace procedures.
 - 3.3 Select relevant equipment to secure, position or support material for power tool application.
 - 3.4 Use power tools safely and effectively for application according to manufacturer's specifications and workplace procedures.
 - 3.5 Store power tools safely when not in use according to workplace procedures.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of waste material, reuse or recycle materials in accordance with environmental and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage and store and secure according to manufacturer recommendations and workplace procedures.
 - 4.3 Record and report relevant safety information in accordance with workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is non-equivalent to CPCPCM2046A Use plumbing hand and power tools.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2046 Use plumbing hand and power tools

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is not equivalent to CPCPCM2046A Use plumbing hand and power tools. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- using four different hand tools safely on three separate projects and operating one different power tool on each project.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- types, function and purpose of hand and power tools used in plumbing applications
- how to access relevant information
- work health and safety (WHS) requirements relevant to use of plumbing hand and power tools.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2047 Carry out levelling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2047A Carry out levelling.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to plan and use levelling equipment.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify levelling requirements.	1.1 Access, read and determine levelling requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
	1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements.
2 Prepare for work.	2.1 Select and check serviceability of appropriate tools, equipment and personal protective equipment (PPE).
	2.2 Check levelling equipment for current calibration in

accordance with state and territory legislation and workplace policies and procedures.

- 3 Perform levelling.
 - 3.1 Identify levels to be transferred from relevant job plans and specifications.
 - 3.2 Set up and operate levelling equipment according to manufacturer's specifications, workplace procedures and standards.
 - 3.3 Record and mark levels according to job requirements and workplace procedures, ensuring the required tolerance and specifications.

- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2047A Carry out levelling.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2047 Carry out levelling

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2047A Carry out levelling.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- using either a pipe laser, rotary laser or automatic level
- grading a pipe or gutter for a minimum of 5 metres to a tolerance of + or - 5 mm.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- different types of levelling tools and equipment and their application and method of operation:
 - laser level
 - automatic level
 - spirit level
 - water level
 - string line
 - staff
- safe work procedures relating to the use, handling and storage of levelling equipment
- process of establishing, recording and checking levels and alignment
- basic calculations relating to carrying out levelling
- how to access relevant information, including relevant job plans and specifications, codes and standards manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used to carry out levelling operations
- work health and safety (WHS) requirements for carrying out levelling operations.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2048 Cut and join sheet metal

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPCM2048A Cut and join sheet metal. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to cut and join sheet metal in the plumbing and services industry.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|--|-----|---|
| 1 | Identify cutting and joining requirements. | 1.1 | Access, read and determine sheet metal cutting and joining requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | | 1.2 | Identify and apply organisational work health and safety (WHS) and environmental requirements. |
| 2 | Prepare for work. | 2.1 | Determine material quantities. |

- 2.2 Create a materials list and collect materials.
 - 2.3 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Cut and join sheet metal.
 - 3.1 Mark out sheet metal in accordance with relevant job plan and specifications.
 - 3.2 Check measurements and cut sheet metal.
 - 3.3 Clean and prepare surfaces for joining.
 - 3.4 Align, fasten and join sheet metal using an appropriate sealing method.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2048A Cut and join sheet metal.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2048 Cut and join sheet metal

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2048A Cut and join sheet metal. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- constructing two different sheet metal products, using two of the following joining techniques:
 - grooved seam
 - knock up joint
 - peened joint
 - simple lap
 - Pittsburgh lock
- and two of the following fastening techniques:
 - spot weld
 - riveted
 - screwed
 - bolted
- including the application of one approved sealing method.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the characteristics of different sheet metal materials
- electrolysis and the problems associated with using incompatible products
- preparation of material for sealing
- approved sheet metal sealants
- how to access relevant information, including codes and standards
- tools, materials and equipment used to cut and join sheet metal
- work health and safety (WHS) requirements for cutting and joining sheet metal.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2049 Cut using oxy-acetylene equipment

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor title change. Changes to Elements and Performance Criteria 2.3 and 3.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM2049A Cut using oxy-LPG-acetylene equipment. Amended title. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to use oxy-acetylene equipment to carry out basic cutting of mild steel.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|----------------------------------|---|
| 1 Identify cutting requirements. | 1.1 Access, read and determine cutting requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace, work health and safety |

(WHS) and environmental requirements.

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment, including personal protective equipment (PPE).
 - 2.3 Prepare work area to support efficient cutting with oxy-acetylene equipment.

- 3 Perform cuts and inspect.
 - 3.1 Set up oxy-acetylene cutting equipment according to relevant codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.2 Select tip size appropriate for the materials to be cut.
 - 3.3 Adjust cutting pressures to manufacturer recommendations for the materials to be cut.
 - 3.4 Prepare materials for cutting according to relevant job plans and specification, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.5 Mark out materials prior to cutting.
 - 3.6 Set flame and perform cuts according to the specified cutting procedures to affect a clean cut.
 - 3.7 Visually inspect completed cuts for compliance with relevant job plans and specifications.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2049A Cut using oxy-LPG-acetylene equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2049 Cut using oxy-acetylene equipment

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Minor title change. Changes to Elements and Performance Criteria 2.3 and 3.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPCM2049A Cut using oxy-LPG-acetylene equipment. Amended title. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- marking out and cutting the following materials from relevant job plans and specifications, using hand-held oxy-acetylene cutting equipment:
 - cut 150 mm x 150 mm mild steel plate (up to 8 mm thick) into three equal pieces
 - cut (up to 8 mm thick) mild steel disc to fit a DN40 to DN100 diameter mild steel pipe
 - cut three holes to fit up to DN50 branch pipes into a length of up to DN100 diameter mild steel pipe.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the safe and operating principles of oxy-acetylene equipment
- the potential fumes and health and safety risks from high temperatures on materials
- the properties of materials and the effect of heat on the properties of metal
- hot work permit
- types of gases used for cutting mild steel
- how to access relevant information from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment to cut mild steel using oxy-acetylene equipment
- work health and safety (WHS) requirements for cutting mild steel using oxy-acetylene equipment.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2052 Weld mild steel using oxy-acetylene equipment

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPCM2052A Weld using oxy-acetylene equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to weld metals associated with the fabrication, installation and repair of plumbing components and systems using oxy-acetylene equipment.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|----------------------------------|---|
| 1 Identify welding requirements. | 1.1 Access, read and determine welding requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check the serviceability of appropriate tools and equipment including personal protective equipment (PPE).

- 3 Prepare materials and welding equipment.
 - 3.1 Clean and prepare material using appropriate tools and techniques according to workplace procedures.
 - 3.2 Prepare work area to support efficient welding with oxy-acetylene equipment.
 - 3.3 Assemble and set up welding equipment, including cylinders and regulators, according to workplace procedures.
 - 3.4 Select welding tips, settings and consumables to meet job requirements and welding procedures according to workplace procedures.

- 4 Perform welding.
 - 4.1 Weld materials to job requirements using safe welding practices.
 - 4.2 Take appropriate action to report or remedy defects in materials or welding equipment, including adjustments to settings and welding technique.
 - 4.3 Clean welds according to workplace requirements.
 - 4.4 Access information and complete documentation according to workplace requirements.

- 5 Clean up.
 - 5.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 5.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2052A Weld using oxy-acetylene equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2052 Weld mild steel using oxy-acetylene equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2052A Weld using oxy-acetylene equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- using oxy-acetylene welding equipment to weld the following:
 - a flat butt weld up to 6 mm mild steel plate, 150 mm long
 - a vertical butt weld up to 6 mm mild steel plate, 150 mm long
 - a rotated butt weld around up to DN100 mild steel pipe located in a horizontal position and rotated during welding.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the dangers associated with oxy-acetylene welding in the fabrication and installation of plumbing systems
- the properties of materials and the effect of heat on properties of metal
- the set-up and operating principles of oxy-acetylene welding equipment
- types of gases used for welding mild steel
- hot work permit
- uses and characteristics of mild steel in the plumbing and services industry
- how to access relevant information, including codes and standards
- tools, materials and equipment used to weld mild steel using oxy-acetylene equipment
- work health and safety (WHS) requirements for welding mild steel using oxy-acetylene equipment.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2053 Weld using metal arc welding equipment

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent CPCPCM2053A Weld using manual metal arc welding equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to weld metals associated with the fabrication and installation of plumbing components, using manual metal arc welding equipment.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|----------------------------------|---|
| 1 Identify welding requirements. | 1.1 Access, read and determine welding requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace work health and safety |

- (WHS) and environmental requirements associated with manual metal arc welding tasks.
- 1.3 Select materials to be welded according to workplace procedures.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check the serviceability of appropriate tools and equipment, including personal protective equipment (PPE).
 - 2.3 Prepare work area to support efficient performance of metal arc welding.
- 3 Prepare materials and equipment for welding.
 - 3.1 Clean and prepare materials for welding.
 - 3.2 Identify tools and techniques appropriate to the preparation of the materials to be welded.
 - 3.3 Set up welding equipment and select correct electrodes according to workplace procedures and job specifications.
- 4 Weld items.
 - 4.1 Perform weld of materials according to relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements using safe welding practices.
 - 4.2 Clean material and prepare for welding in accordance with workplace procedures.
 - 4.3 Visually inspect weld to ensure weld is fit for purpose.
- 5 Clean up.
 - 5.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 5.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent CPCPCM2053A Weld using manual metal arc welding equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2053 Weld using metal arc welding equipment

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent CPCPCM2053A Weld using manual metal arc welding equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- using manual metal arc welding equipment to:
 - weld butt joint in mild steel plate up to 8 mm, 150 mm long
 - fillet weld mild steel plate up to 8 mm, 150 mm long
 - pad weld mild steel plate up to 8 mm, 150 mm long.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- dangers associated with manual metal arc welding plumbing components
- the properties of materials and the effect of heat on properties of metal operating principles of manual metal arc welding equipment
- defects associated with manual metal arc welding
- hot work permit
- use and characteristics of materials:
 - electrodes
 - mild steel plates
- how to access relevant information, including codes and standards
- tools, materials and equipment used to weld using metal arc welding equipment
- work health and safety (WHS) requirements for welding using metal arc welding equipment.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2054 Carry out simple concreting and rendering

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2054A Carry out simple concreting and rendering. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to undertake minor concreting and rendering tasks.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Identify concreting and rendering requirements. | 1.1 Access, read and determine concreting and rendering requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace work health and safety (WHS) and environmental requirements. |
| 2 Prepare for work. | 2.1 Create a materials list and collect materials. |

- 2.2 Select and check the serviceability of appropriate tools and equipment, including personal protective equipment (PPE).
- 3 Place concrete or cement render.
 - 3.1 Prepare site prior to placement of concrete or cement render.
 - 3.2 Prepare concrete or cement render mixture to meet job and manufacturer's requirements.
 - 3.3 Transport concrete or cement render safely using appropriate methods.
 - 3.4 Apply concrete in formwork or render to restore damaged surface.
 - 3.5 Screed concrete surface to project datum or screed cement render to ensure level or plumb finish.
 - 3.6 Finish surface of concrete or cement render according to relevant job plans and specifications.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2054A Carry out simple concreting and rendering.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2054 Carry out simple concreting and rendering

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2054A Carry out simple concreting and rendering. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- carrying out one of the following:
 - bench an access chamber a minimum of 600 mm square or diameter
 - install two thrust blocks
 - cement render pipe penetration through a floor or wall
 - pour a concrete slab to minimum of 600 mm square
 - repair a concrete slab to minimum of 600 mm square
 - repair pipe chases in a brick wall a minimum of 600 mm long.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- basic levelling techniques
- categories of materials and their safe handling, storage and transport requirements
- concrete and rendering materials
- plans, drawings and specifications
- simple formwork and reinforcing
- different types of concreting tools and equipment
- how to access relevant information, including codes and standards
- tools, materials and equipment used to carry out simple concrete and rendering
- work health and safety (WHS) requirements for carrying out simple concrete and rendering.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM2055 Work safely on roofs

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2055A Work safely on roofs.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to work safely on roofing structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify work requirements.

1.1 Access, read and determine working safely on roofs requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.

1.2 Obtain, interpret and follow organisational work health and safety (WHS) and environmental requirements.

1.3 Inspect fall prevention and fall arrest equipment for

serviceability, ensuring

- | | | | |
|---|---|-----|---|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select and check serviceability of appropriate tools and equipment, including personal protective equipment (PPE). |
| | | 2.3 | Select and erect appropriate signage and barricades. |
| 3 | Install and use fall prevention system. | 3.1 | Install fall prevention and use fall arrest equipment according to manufacturer's, workplace and regulatory requirements. |
| | | 3.2 | Check fall prevention and fall arrest safety systems periodically for compliance with manufacturer's requirements, regulations and report any |
| 4 | Clean up. | 4.1 | Dismantle fall prevention and fall arrest safety system according to sequence |
| | | 4.2 | Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. |
| | | 4.3 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM2055A Work safely on roofs.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM2055 Work safely on roofs

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM2055A Work safely on roofs.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- identifying correct and safe access and egress to and from roof area
- working safely on roofs above two meters on a minimum of two occasions, using different fall protection equipment/devices on each occasion.

One of the above occasions must include a restraint technique (anchor point) system with a minimum of two anchor points. The candidate must access the work area, traverse between anchor points, and exit from the work area.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- statutory jurisdictional regulations and workplace safety requirements relevant to working safely on roofs, including but not limited to:
 - limited freefall
 - anchor points
 - lanyards and energy absorbers
 - rescue plan and suspension trauma
 - scaffolds and guardrails
 - safety mesh
 - ladders
 - hazardous and fragile materials
 - manual handling
 - electrical hazards, including overhead cables

- falling objects
- how to access relevant information, including relevant codes and Australian standards
- tools, materials and equipment used to work safely on roofing structures
- work health and safety (WHS) requirements for working safely on roofing structures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM3021 Flash penetrations through roofs and walls

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM3021A Flash penetrations through roofs and walls. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to set out, cut and flash roof and wall penetrations.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and determine flashing penetration requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment, including personal protective equipment (PPE).

- 3 Flash penetrations.
 - 3.1 Identify location of wall and roof penetrations, allowing for existing and future services.
 - 3.2 Set out and cut penetrations.
 - 3.3 Install supports as required and fit the penetrating product.
 - 3.4 Fit and fix purpose-made or proprietary flashing as per relevant job plans and specifications, codes, Australian standards manufacturer's specifications and jurisdictional requirements.
 - 3.5 Apply fire resistant requirements to penetrations to meet standards and codes where required.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM3021A Flash penetrations through roofs and walls.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM3021 Flash penetrations through roofs and walls

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM3021A Flash penetrations through roofs and walls. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- flashing the following penetrations:
 - a square/rectangular penetration with sides greater than 300 mm through wall cladding
 - a square/rectangular penetration with sides greater than 300 mm through roof sheeting
 - a circular penetration greater than 200 mm diameter through roof sheeting.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- terminology relating to flashing penetrations
- electrolysis and the problems associated with using incompatible products
- compatibility of various roofing and wall cladding materials with different joining methods
- processes, procedures and techniques for:
 - flashing penetrations on various roof coverings
 - flashing penetrations on various wall claddings
 - fabricating and installing flashings to prevent leaking
- principles of:
 - capillary actions
 - thermal expansion
 - corrosion and preventative treatments
 - electrolysis and impact of using dissimilar metals and products
- how to access relevant information, including job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used to set out, cut and flash roof and wall penetrations

- work health and safety (WHS) requirements for setting out, cutting and flashing roof and wall penetrations.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM3022 Weld polymer pipes using fusion method

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Pre-requisite unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM3022A Weld polyethylene and polypropylene pipes using fusion method. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to fusion weld polymer pipes.

In some jurisdictions, this unit of competency may form part of accreditation, licencing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Access, read and determine welding requirements for polymer pipes and installation methods from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Determine job priorities and sequence job tasks in consultation with others on the worksite. |

- 1.3 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.4 Select and check the serviceability of the appropriate tools, equipment and personal protective equipment (PPE).
- 2 Identify welding requirements.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Check welding equipment for correct operation according to manufacturer instructions.
- 3 Weld and inspect pipe joints.
 - 3.1 Prepare joints using tools and techniques according to manufacturer specifications and relevant standards.
 - 3.2 Conduct test welds and verify according to job specifications.
 - 3.3 Carry out fusion welds according to relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.4 Visually inspect fusion welds for compliance with relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM3022A Weld polyethylene and polypropylene pipes using fusion method.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM3022 Weld polymer pipes using fusion method

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Pre-requisite unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM3022A Weld polyethylene and polypropylene pipes using fusion method. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- butt welding three joints up to DN110 (OD) for a non-pressure application
- electro-fusion welding one socket joint up to DN110 (OD) for a pressure application.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- safe operation procedures for fusion welding of polymer pipe
- effect of heat and other products on the properties of polymer pipe
- operating principles of fusion welding equipment
- characteristics and limitations of materials
- surface preparation in the welding process
- identification of welding requirements
- how to access relevant information, including codes and standards
- tools, materials and equipment used to fusion weld polymer pipes
- work health and safety (WHS) requirements for fusion welding polymer pipes.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM3023 Fabricate and install non-ferrous pressure piping

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Element and Performance Criteria 2.2 and 3.5.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM3023A Fabricate and install non-ferrous pressure piping. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to fabricate and install non-ferrous pressure piping.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, and regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.

1.1 Access, read and determine requirements to fabricate and install non-ferrous pressure piping from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.

1.2 Identify and apply workplace policies and procedures,

work health and safety (WHS) and environmental requirements.

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Set up silver brazing equipment according to workplace and WHS procedures.
 - 2.3 Select and check serviceability of appropriate tools and equipment including personal protective equipment (PPE).

- 3 Fabricate, install and test pipe system.
 - 3.1 Set out pipelines and connection points according to drawings and specifications or job instructions.
 - 3.2 Use oxy-acetylene equipment according to workplace and WHS procedures.
 - 3.3 Install pipework in accordance with relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.4 Test installed pipework according to s relevant codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.5 Shut down and dismantle silver brazing equipment according to workplace and WHS procedures.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM3023A Fabricate and install non-ferrous pressure piping.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM3023 Fabricate and install non-ferrous pressure piping

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Element and Performance Criteria 2.2 and 3.5.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM3023A Fabricate and install non-ferrous pressure piping. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- fabricating, installing and testing a DN20 copper line from a supply point to three fixed outlets, supported and clipped according to relevant job plans and specification, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements with a minimum:
 - one 15 mm mechanical bend
 - one 20 mm mechanical bend
 - one 15 mm spring bend
 - one 20 mm spring bend
 - one 15 mm capillary elbow
 - one 20 mm capillary elbow
 - one expanded silver brazed joint
 - one silver brazed copper to brass joint
 - two branch formed silver brazed joints
 - one mechanical flared joint
 - branches connecting at least two other non-ferrous materials, ensuring branches and bends are square.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- fabrication, installation and testing process for non-ferrous pressure pipe systems

- relevant statutory authorities' requirements and standards related to fabricating, installing and testing non-ferrous pressure pipe systems
- effect of heat and other products on the properties of polymer pipe
- types of non-ferrous materials, including joining techniques
- hot works permit
- how to access relevant information, including codes and standards
- tools, materials and brazing equipment used to fabricate and install non-ferrous pressure piping
- work health and safety (WHS) requirements to fabricate and install non-ferrous pressure piping.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM3024 Prepare simple drawings

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM4014A Prepare simple sketches and drawings. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to produce onsite drawings for plumbing services work.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Create simple sketches and drawings. | 1.1 Identify key features required through consultation with associated persons and reference to plans. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| | 1.3 Select suitable views to create simple sketches and drawings. |

- | | | | |
|---|------------------------------|--|---|
| | 1.4 | Use standard drawing conventions, incorporating relevant codes and standards to create simple sketches and drawings. | |
| 2 | Notate and process drawings. | 2.1 | Record essential information on the drawing with symbols and abbreviations according to standard drawing conventions. |
| | | 2.2 | Store drawings according to organisational administration and quality procedures. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM4014A Prepare simple sketches and drawings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM3024 Prepare simple drawings

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM4014A Prepare simple sketches and drawings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- producing three drawings for plumbing services work from any of the following:
 - a sanitary plumbing installation
 - a sanitary drainage installation
 - a mechanical services installation
 - a gas installation
 - a roofing installation
 - a fire services installation
 - a water services installation.

The drawings must:

- include 2D plan, schematic or isometric, and sectional drawings
- be presented clearly with appropriate notations and labelling.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- drawing conventions and features, including direction, scale, key, contours, symbols and abbreviations
- drawing techniques
- types of drawings required:
 - floor plans
 - land boundaries and footprint of building

- schematic drawings of pipework
- sectional
- isometric
- how to access relevant information, including codes and standards
- tools, materials and equipment used for creating drawings
- work health and safety (WHS) requirements where measurements are to be taken and recorded.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM3025 Install trench support

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical errors corrected in Element 1.3 and 3.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to install trench support.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Access, read and determine installation requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| | 1.3 Plan and sequence tasks in conjunction with others involved in or affected by the work. |

- 1.4 Select and check tools and equipment, including personal protective equipment (PPE), for serviceability.
 - 1.5 Identify the location of underground services.
 - 1.6 Prepare work area to support efficient installation of trench support systems.
- 2 Identify installation requirements.
 - 2.1 Source equipment required for the excavation.
 - 2.2 Identify potential hazards and determine and implement control measures.
 - 2.3 Set out trench support installation according to relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 2.4 Consider the location of existing services and any traffic control requirements during installation.
- 3 Install trench support.
 - 3.1 Determine and transfer installation requirements for installing trench support.
 - 3.2 Install trench support according to relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements and without damage to surrounding environment, existing structures or other services.
 - 3.3 Check installation for compliance with relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
- 4 Clean up.
 - 4.1 Remove trench support equipment, backfilling trench and return support equipment to storage area in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM3025 Install trench support

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical errors corrected in Element 1.3 and 3.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and removing as a minimum, two trench support systems using an approved shoring method and equipment to a minimum depth of 1.5 metres.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- types of trench support systems including:
 - aluminium shoring shields
 - close timber shoring
 - drag boxes
 - fixed and/or adjustable trench boxes
 - hydraulic vertical shoring
 - lite box aluminium panels
 - powerbrace
 - slide rails
 - raking shoring
- hazards associated with excavation including:
 - soil types and the likelihood of sudden changes in soil
 - presence of ground water and water entering cracks in soil adjacent to the excavation
 - effects on ground material by exposure to the air after excavation
 - vibration due to machinery, plant, motor vehicles and machinery
 - excavation depth and shape

- presence or proximity of other underground services
- presence of excavation, backfill material or equipment placed near an excavation
- excavation within public property requirements
- excavation close to footings and buildings
- work health and safety (WHS) requirements associated with the installation of trench support systems
- how to access relevant information, including job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used for the installing trench support.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM4011 Carry out work-based risk control processes

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Unit Sector added to unit.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM4011A Carry out work-based risk control processes. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to carry out work-based risk control processes.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify risks.

1.1 Obtain information and data to determine the nature and scope of workplace risks and risk controls.

1.2 Inspect site conditions and functions for potential hazards.

1.3 Document potential hazards.

- 1.4 Access relevant information to determine situations covered by existing procedures.
 - 1.5 Classify type and scope of hazards not covered by existing procedures.
- 2 Assess risk.
 - 2.1 Consider and determine the likelihood of an event happening.
 - 2.2 Evaluate and determine consequences of the potential event.
 - 2.3 Consider and determine risk level by combining likelihood and consequence evaluations.
 - 2.4 Refer unacceptable risk to the appropriate person or action according to own authority and capacity.
- 3 Apply a course of action for acceptable risks.
 - 3.1 Conduct a detailed analysis of options.
 - 3.2 Identify resource requirements to manage risks.
 - 3.3 Select the most appropriate action to manage or resolve the risk.
- 4 Complete records and reports.
 - 4.1 Document actions resulting from the risk assessment activity according to workplace procedures and regulatory authorities' requirements.
 - 4.2 Document safety information and procedures.
- 5 Review effectiveness of risk control measures.
 - 5.1 Establish a systematic review process of risk control measures.
 - 5.2 Identify appropriate communication methods to inform associated persons of the control measures to safe operating procedures.
 - 5.3 Develop a risk control policy and procedure based on the findings of the risk control review process.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM4011A Carry out work-based risk control processes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM4011 Carry out work-based risk control processes

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Unit Sector added to unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM4011A Carry out work-based risk control processes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- conducting a plumbing and services work-based risk assessment
- documenting and evaluating a risk management process
- locating, interpreting and applying relevant information
- complying with work health and safety (WHS) regulations and Commonwealth, state and territory legislation applicable to workplace operations
- identifying WHS duty holders and their duties
- developing a risk control policy and procedure.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- risk management theory and risk assessment terminology, including the hierarchy of controls
- reporting and recording procedures
- quality assurance systems and standards
- regulatory requirements related to obligations and risk management
- personal risk assessment and control processes
- how to access relevant information, including codes and standards
- tools, materials and equipment used for carrying out work-based risk control processes
- WHS requirements for carrying out work-based risk control processes.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM4012 Estimate and cost work

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 2.6.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM4012A Estimate and cost work.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to estimate materials, labour and time requirements and to establish costs for provision of quotations to provide services to a Class 1 building.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---------------------|-----|--|
| 1 | Gather information. | 1.1 | Determine customer requirements. |
| | | 1.2 | Access plans and specifications to determine work requirements. |
| | | 1.3 | Consider sustainability principles and concepts applicable to proposed work. |

- 1.4 Determine source of products and services to be provided.
 - 1.5 Determine delivery point and methods of transportation.
- 2 Estimate materials, labour and time.
 - 2.1 Plan and sequence work, including preparatory tasks.
 - 2.2 Calculate types and quantities of materials required.
 - 2.3 Determine plant and equipment requirements to perform work.
 - 2.4 Assess labour requirements to perform work.
 - 2.5 Determine time requirements to perform work.
 - 2.6 Calculate sundry costs to perform work.
- 3 Calculate costs.
 - 3.1 Estimate total cost of materials, plant, equipment, sundry costs and labour according to workplace procedures.
 - 3.2 Apply overheads and mark-up percentages to calculate total work cost.
 - 3.3 Produce final cost for work.
- 4 Document and verify details.
 - 4.1 Record details of services, costs and charges according to workplace procedures.
 - 4.2 Apply terms, inclusions and exclusions according to workplace procedures.
 - 4.3 Present quotation according to workplace procedures.
 - 4.4 Store quotations and documentation for future reference according to workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM4012A Estimate and cost work.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM4012 Estimate and cost work

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Elements and Performance Criteria 2.6.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM4012A Estimate and cost work.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- providing detailed quotations from a set of plans for three varied jobs for a Class 1 building to customer requirements.

The quotes and tenders must include two of the following:

- sanitary/drainage installation
- mechanical services installation
- a gas installation
- a roofing installation
- a fire services installation
- a water services installation

The quotes and tenders must:

- include accurate and industry realistic estimates and costs for labour, materials, overheads and timing
- be reflective of the clients' needs
- be presented in according to workplace procedures.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- how to read plans and specifications to determine requirements
- process for estimating, managing and costing work
- calculating material requirements
- relevant statutory requirements related to estimating and costing work

- tendering and quotations
- contracting processes
- factors for estimating and costing:
 - labour
 - awards and workplace agreements
 - materials
 - plant and equipment
 - overheads
- costing programs
- how to access relevant information, including codes and standards
- tools, materials and equipment used for estimating and costing work
- work health and safety (WHS) requirements for estimating and costing work.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM4013 Produce 2-D architectural drawings using design software

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM4013A Produce 2-D architectural drawings using CAD software. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to produce two-dimensional (2-D) architectural drawings using computer-aided design (CAD) software. It includes preparing drawings from project briefs, sketches, drawings and plans for residential and commercial projects.

This unit applies to those who work are responsible for preparing architectural drawings.

This unit is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Create a drawing template file.
 - 1.1 Confirm and clarify drawing requirements with relevant personnel.
 - 1.2 Access and refer to current building and plumbing standards and regulations.
 - 1.3 Set up a basic drawing environment.
 - 1.4 Create a layering strategy for drawing, viewing and editing.
 - 1.5 Create an architectural library.
 - 1.6 Create suitable styles for title block, hatch patterns, dimension lines and thicknesses and text.
 - 2 Produce architectural drawings.
 - 2.1 Produce drawings using appropriate layers.
 - 2.2 Add relevant notations to the drawing as required.
 - 2.3 Add dimensions, using appropriate scales, to the drawing.
 - 2.4 Use editing commands to modify drawing elements and existing text.
 - 2.5 Delete elements that are not required from the existing drawing.
 - 3 Print CAD drawings.
 - 3.1 Set printing requirements to suit page layout for drawings.
 - 3.2 Set print parameters for printer.
 - 3.3 Print drawings on the correct media.
 - 3.4 Observe sustainability principles and concepts when preparing for and undertaking work process.
 - 4 Save and back up files.
 - 4.1 Create suitable directories for the drawing project.
 - 4.2 Save and back up drawing files into specific drives or

directories.

4.3 Retrieve, rename and edit saved files as required.

5 Import files.

5.1 Insert drawing files into other software applications.

5.2 Import text files from other software application into CAD.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM4013A Produce 2-D architectural drawings using CAD software.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM4013 Produce 2-D architectural drawings using design software

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM4013A Produce 2-D architectural drawings using CAD software. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- producing one 2-D architectural drawing of a plumbing and services layout for a single dwelling (Class 1a) building, including:
 - the use of a computer-aided design (CAD) architectural program
 - compliance with current standards and codes
 - develop accompanying specifications.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types and application of drawings, including:
 - elevations or projections
 - floor plans
 - site plans
 - sections
 - details
- drafting and drawing protocols/conventions, including:
 - abbreviations
 - commonly used symbols
 - legends / keys
 - lettering standards
 - scale

- SI units of measurement
- paper size
- current building and plumbing codes, standards and regulations
- construction terminology
- structural systems and construction technology
- characteristics and application of building and plumbing materials
- sustainability principles and concepts which cover:
 - social, economic and environmental use of resources to meet current and future needs
 - energy efficiency
 - disposing of waste material to ensure minimum environment impact
 - relevant work health and safety (WHS) principles and responsibilities.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM4015 Access and interpret regulatory requirements for the plumbing and services industry

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to identify and apply the plumbing regulatory requirements to design and planned work activities for the plumbing and services industry, including the National Construction Code (NCC).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---|-----|--|
| 1 Access and identify the National Construction Code (NCC). | 1.1 | Identify the hierarchical relationship of legislation, Acts, regulations, codes and standards in the plumbing and services industry. |
| | 1.2 | Determine building classification and type in accordance with the National Construction Code (NCC). |
| | 1.3 | Identify plumbing and services covered by the National Construction Code (NCC). |

- | | |
|---|--|
| 2 Interpret the National Construction Code (NCC). | 2.1 Identify and interpret the requirements of jurisdictional variations and additions in the (NCC). |
| | 2.2 Identify the difference between Performance Solutions and Deemed to Satisfy (DTS) installations. |
| | 2.3 Identify jurisdictional documentation requirements for Performance Solutions and Deemed to Satisfy (DTS) for plumbing installations. |
| | 2.4 Determine relevant certification requirements for use of materials and products. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM4015 Access and interpret regulatory requirements for the plumbing and services industry

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- Locating, downloading and identifying the different volumes of the National Construction Code (NCC)
- Identifying ten (10) different Australian Standards referenced in the National Construction Code volume 3 "Plumbing Code of Australia" (PCA) and the area of plumbing they cover, including jurisdictional variations and additions
- Identifying the official location where to obtain five (5) current versions of Australian Standards referenced in the PCA
- Determining classes and type of buildings referenced in the National Construction Code (NCC)
- Identifying the cross-volume considerations in the PCA, locating their location within NCC volumes 1 or 2.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the different sections, parts and their purpose contained in each volume of the National Construction Code (NCC)
- the difference between Performance Solutions and Deemed to Satisfy (DTS) installations
- the hierarchy of legislation and relationship between Acts, regulations, codes and standards
- jurisdictional requirements and application process for a performance solution
- jurisdictional requirements and process to lawfully carry out plumbing and services work
- WaterMark certification scheme and its relevance to installation and design of plumbing systems, or
- a metal cladding system on a building to meet compliance for three of the following provisions:
 - structural
 - sound transmission

- energy efficiency
- bushfire
- condensation management
- weatherproofing
- fire resistance.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM5010 Design complex sanitary plumbing and drainage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 3.1 and 3.5.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM5010A Design complex sanitary plumbing and drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to undertake the hydraulic engineering design of complex sanitary plumbing and drainage installation and to prepare specifications for a range of wide-span and high-rise building applications up to 25 metres, including basement for residential, commercial and industrial buildings.

The unit requires application of technical skills and knowledge to prepare plans, specifications and operating and maintenance manuals.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------|---|
| 1 Evaluate design | 1.1 Establish scope of work for complex sanitary plumbing |
|-------------------|---|

- parameters.
- and drainage systems for wide-span and high-rise building projects.
- 1.2 Determine design requirements from relevant Australian Standards, codes, plans, specifications and client brief.
 - 1.3 Interpret statutory and regulatory requirements for the design of complex sanitary plumbing and drainage systems.
 - 1.4 Analyse and apply Australian Standards and codes for the design of complex sanitary plumbing and drainage systems.
 - 1.5 Interpret manufacturer requirements and trade and technical manuals.
 - 1.6 Conduct additional research, including a desktop study to outline design parameters.
 - 1.7 Conduct a cost–benefit analysis comparing a range of pipe materials and system designs.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems, type and location of fittings and valves.
 - 2.2 Assess existing utilities services capacity and sizes.
 - 2.3 Calculate pipe sizes, pipe grades and trapping and ventilation requirements for a range of applications.
 - 2.4 Plan pipe support for a range of applications.
 - 2.5 Size and detail pump well, pump and pump control requirements.
 - 2.6 Specify approved materials, jointing methods and installation requirements for complex sanitary plumbing and drainage systems.
 - 2.7 Plan and detail acoustic performance of the sanitary plumbing and drainage system within the system design.
- 3 Design and size systems.
- 3.1 Design complex sanitary plumbing and drainage systems for a range of wide-span and high-rise building applications.

- 3.2 Design rising main systems.
 - 3.3 Design and size a fully vented or fully vented modified system.
 - 3.4 Design and size a reduced velocity aerator stack system.
 - 3.5 Design and size complex sanitary plumbing and drainage systems using computer-aided design and drafting packages.
- 4 Prepare documentation.
 - 4.1 Prepare client brief of the preferred design.
 - 4.2 Prepare plans and specifications for a range of complex sanitary plumbing and drainage systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM5010A Design complex sanitary plumbing and drainage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM5010 Design complex sanitary plumbing and drainage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 3.1 and 3.5.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM5010A Design complex sanitary plumbing and drainage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details of complex sanitary systems for a 25-metre high-rise mixed development building inclusive of a basement, using two approved sanitary plumbing systems, including:
 - fixtures on each level
 - specification and plans which include:
 - inspection openings and drainage cleaning provisions
 - overflow relief provisions
 - proprietary air admittance and relief systems
 - proprietary velocity reduction fittings
 - sewerage pumping stations (wet wells)
 - piping systems
 - venting systems.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in design of complex sanitary plumbing and drainage systems for all classes of building
- National Construction Code (NCC)
- other relevant Australian standards, codes or standard operating procedures (SOPs)
- principles of technology in the design of hydraulic systems

- procedures for maintaining air balance within the systems
- workplace safety requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpretation of plans and specifications
 - sizing and documenting layout of complex sanitary plumbing and drainage systems for applications, including residential, commercial and industrial
- design requirements:
 - architectural plans
 - building specifications
 - fire rating of penetrations
 - owner requirements
 - pipework identification
 - soil quality
 - specialist waste applications
 - unstable or water-charged ground
- cost–benefit analysis considerations
- Australian Standards, codes, statutory and regulatory requirements:
 - NCC
 - relevant Australian Standards and codes, including AS/NZS 3500 Plumbing and drainage set
 - AS 2200 Design charts for water supply and sewerage
 - local government and health department requirements
 - state/territory government requirements
 - preparation of documentation for authorities’ approval
- requirements from manufacturers:
 - material specifications
 - pump tables
 - sizing tables
 - recommended specific fixings for pipework
 - technical and trade manuals
- information gathered through desktop study:
 - architectural and building plans
 - developer plans
 - manufacturers’ data
 - applications
 - brochures
 - forms
 - policies
 - other reports as available

- performance requirements, which must include flow, velocity, pressure and discharge requirements established using relevant Australian standards, codes and local authority plans
- layout of pipework systems based on principles of economy, serviceability, durability and fitness for use:
 - drainage
 - elevated pipework
 - low pressure pump
 - vacuum
 - vented stack systems
- types of fittings and valves
- access chamber details:
 - benching requirements
 - flow
 - gradient requirements
 - inlet and outlet connections
 - ladder access
 - lids
- cost–benefit analysis considerations
- gullies covering details such as size, location, bedding and concrete support:
 - boundary traps
 - disconnector gullies (DG)
 - floor waste (FW)
 - overflow relief gullies (ORG)
- types of calculations for complex sanitary plumbing and drainage systems:
 - determination of flow and fixture loadings
 - gradient calculations
 - interpretation of design charts and tables
 - pipe sizing calculations
 - reduced level calculations
 - self-cleaning velocities
- design elements of anchor blocks:
 - flow forces to be resisted
 - keying and anchorage points
 - sizes
 - soil characteristics
- types of pipe support:
 - anchors
 - bedding
 - bracket spacing

- concrete support
- corrosion protection
- cover
- hanging brackets
- manufacturer-recommended specific fixings
- material requirements
- provision for expansion
- saddles
- wall and ceiling brackets.
- pump well, pump and pump control requirements:
 - access covers
 - automatic controls
 - capacity
 - chains
 - corrosion-resistant materials
 - detailing
 - emergency storage
 - high- and low-level water controls and alarms
 - impeller sizing
 - inlet and outlet design requirements
 - installation and mounting requirements
 - ladder access
 - macerator requirements
 - odour control
 - pump selection
 - pump sizing
 - pump well sizing
 - space requirements
 - step irons
 - valve requirements
 - ventilation
 - warning system
- sanitary and plumbing drainage system materials:
 - cast iron (Fe)
 - concrete
 - copper (CU)
 - vitrified clay pipe (VCP)
 - high density polyethylene (HDPE)
 - unplasticised polyvinyl chloride (uPVC)
 - other approved material

- fittings and fixtures
- measures to prevent the spread of fire
- sound attenuation requirements.
- jointing methods:
 - brazing and threading
 - electrofusion welding
 - mechanical joints
 - rubber ring
 - solvent cement welding
- installation requirements:
 - bedding
 - clipping
 - concrete support
 - fire rating of penetrations
 - installation details
 - jointing requirements
 - level of workmanship
- elements of rising main systems:
 - approved pressure pipe and fittings
 - calculated rise and pump delivery requirements
 - pipe velocities
 - pump sizing to meet calculated flow conditions
- ways to apply sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - effect on the environment due to overflow or leakage
 - water efficiency
 - consideration of the Green Building Council of Australia rating scheme
 - local environment consideration regarding overflow, disposal and reuse
- types of plans (computer-generated or hand-drawn):
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - schematics
 - sections
- specification information:
 - bedding

- commissioning
- concrete support and detailing specialised components
- jointing
- access chambers (manholes)
- manufacturer requirements
- materials
- pumps
- work health and safety (WHS)
- support
- testing
- workmanship
- testing:
 - air pressure
 - drainage inspection
 - hydrostatic
 - performance
 - quality assurance (QA) audit
- commissioning inclusions:
 - charging traps
 - checking leaks
 - checking for foreign material
 - checking for system defects
 - checking that system functions as per design
 - checking trap water seal retention
 - cleaning grates
 - system certification
- operation and maintenance manual inclusions:
 - construction drawings
 - results of commissioning test
 - certification documentation
 - maintenance schedules
 - manufacturer brochures and technical information
 - manufacturer warranties.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM5011 Design complex cold water systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Change to Elements and Performance Criteria 3.6.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM5011A Design complex cold water systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design complex cold water distribution systems in commercial and high-rise mixed development building to a minimum of 29 floors inclusive of a basement. The unit requires application of technical skills and knowledge to design and size systems and prepare operational and compliance documentation.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit requirements are typically carried out by a consultant or design engineer.

Application of the unit is relevant to multi-storey residential, commercial and industrial buildings with or without connection to reticulated water supply.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Evaluate design parameters.
 - 1.1 Identify and establish scope of work from preliminary information and in consultation with associated persons.
 - 1.2 Determine design parameters from relevant Australian Standards, codes, plans, specifications, statutory and regulatory requirements and client brief.
 - 1.3 Apply sustainability principles and concepts as part of the design process.
 - 1.4 Establish performance requirements, considering safety of system users or building occupants.
 - 1.5 Determine available pressure and flow rates at site location.
 - 1.6 Conduct research, including a desktop study to outline design parameters.
 - 1.7 Interpret manufacturer requirements and trade and technical manuals.
 - 1.8 Conduct a cost-benefit analysis to compare a range of materials and system designs.
 - 2 Plan and detail system components.
 - 2.1 Plan layout of pipework systems, including the type and location of fittings and valves and acoustic performance of the system.
 - 2.2 Detail type, location and requirements for backflow prevention devices.
 - 2.3 Specify flush valve system types and operation.
 - 2.4 Calculate pipe sizes, velocities, flows and residual pressures for a range of applications.
 - 2.5 Detail or design cold water system components.
 - 2.6 Size and detail pump, pump controls and pump room requirements.
 - 2.7 Specify approved materials, jointing methods and installation requirements.

- | | |
|----------------------------|---|
| 3 Design and size systems. | 3.1 Design systems for a range of wide-span and high-rise building applications. |
| | 3.2 Design flush valve distribution systems for sanitary ablutions. |
| | 3.3 Design a range of delivery systems. |
| | 3.4 Design and size complex cold water distribution systems using computer software packages. |
| | 3.5 Design water storage and break tanks. |
| | 3.6 Design cold water pressure systems and incorporate into building supply system. |
| | 3.7 Design backflow penetration systems associated with cold water systems. |
| | 3.8 Calculate pipe sizes, velocities and pressures. |
| | 3.9 Calculate system pressures, pressure losses and pressure reduction measures. |
| 4 Prepare documentation. | 4.1 Prepare client brief for the preferred design. |
| | 4.2 Prepare plans and specifications for designing complex cold water systems. |
| | 4.3 Prepare testing and commissioning schedule. |
| | 4.4 Produce operation and maintenance manual for maintaining cold water systems. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM5011A Design complex cold water systems.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM5011 Design complex cold water systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Elements and Performance Criteria 3.6.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM5011A Design complex cold water systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details of two methods of providing a cold water supply for a high-rise mixed development building to a minimum of 29 floors inclusive of a basement, including:
 - fixtures on each level
 - a non-drinking supply system
 - a flush valve system
- planning system detail components, including:
 - authorities' connection
 - backflow prevention requirements
 - fixtures and fitments
 - flush valves
 - meter assemblies
 - storage tanks
 - piping systems
 - pumps
- applying sustainability principles and concepts throughout to achieve a star rating under the Green Building Council of Australia rating scheme
- evaluating health risks associated with drinking and non-drinking water supplies and actioning as required within the system design.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- AS/NZS 3500 Plumbing and drainage set
- AS 2200 Design charts for water supply and sewerage
- common terminology and definitions used in design of cold water reticulation systems
- National Construction Code (NCC)
- local and state government requirements
- preparation of documentation for authorities' approval
- nature of materials used and the effects of performance under various conditions
- other relevant Australian Standards, codes or standard operating procedures
- principles of technology used in design of cold water reticulation and hydrant and hose reel systems for all classes of building
- requirements of state regulatory authorities and manufacturer specifications, including hazards identified in relation to devices and systems used
- water quality requirements
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- methods to apply sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - effect on the environment due to overflow or leakage
 - water efficiency
 - consideration of the Green Building Council of Australia rating scheme
- information on design requirements:
 - architectural plans
 - building specifications
 - effect of water quality on pipework, plant and equipment
 - owner requirements
 - pipework and valve identification
 - soil quality
 - specialist water use applications
 - unstable or water-charged ground
- specifications for:
 - bedding
 - flow requirements
 - jointing
 - manufacturer requirements
 - materials
 - residual pressures

- WHS
- specialised components
- support
- testing
- valve selection
- water treatment
- workmanship
- locating information on systems and components from a variety of sources such as:
 - manufacturer's websites
 - trade meetings and exhibitions
 - brochures
 - trade outlets
 - other design projects
- cost-benefit analysis considerations for the selection of materials and system:
 - enabling cost effective choices without compromising the integrity of the project
 - expected design life
 - associated labour costs
 - material costs
 - safety factors
 - speed of installation
 - suitability of materials
 - range of system choices
- manufacturer's requirements:
 - flow and pressure requirements for fixtures and appliances
 - material specifications
 - pump tables
 - sizing tables
 - recommended specific fixings for pipework
 - technical and trade manuals
- types of plans produced using computer software and drawing equipment:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - schematics
 - sections
- flow, velocity, pressure and discharge requirements, established using relevant Australian Standards, codes, and state, territory and local government authorities' plans
- layout of pipework systems:

- principles of economy, serviceability, durability and fitness for use
- dual feed
- gravity feed
- main pressure
- pumped system
- ring main
- types of fittings:
 - bends
 - elbows
 - tees
 - unions
- types of valves:
 - backflow prevention
 - excess pressure
 - isolating
 - pressure limiting
 - pressure reduction
 - strainers
- backflow prevention devices:
 - registered break tank (RBT)
 - registered air gap (RAG)
 - double-check valve assembly (DCV)
 - dual-check valve with intermediate vent (DuCV)
 - reduced pressure detector assembly (RPDA)
 - reduced pressure zone device (RPZD)
 - other approved devices
- types of flush valve systems:
 - backflow prevention requirements
 - gravity
 - mains pressure
 - pipe sizing requirements
 - storage requirements
- cold water system meter assemblies:
 - direct and indirect
 - electronic
 - inferential
 - magnetic
- thrust blocks and their design elements:
 - design details for tees, elbows and valves
 - keying and anchorage points

- sizes
- soil characteristics
- velocity and flow forces to be resisted
- range of pipe supports:
 - anchors
 - bedding
 - bracket spacing
 - corrosion protection
 - cover
 - hanging brackets
 - manufacturer-recommended specific fixings
 - material requirements
 - provision for expansion
 - saddles
 - wall and ceiling brackets
- considerations for water storage systems:
 - air gap
 - automatic controls
 - drain down provision
 - inlet valve design and sizing
 - outlet sizing
 - overflow requirements
 - provision to maintain service while cleaning
 - provision to maintain service while servicing
 - safe tray requirements
 - tank access
 - tank maintenance
 - tank sizes
- water treatment:
 - filtration
 - reverse osmosis (RO)
 - softening
- pump, pump controls and pump room requirements:
 - acoustic performance
 - automatic changeover
 - automatic controls
 - drain down provision
 - dual pump provision
 - impeller sizing
 - inlet and outlet design requirements

- installation and mounting requirements
- pressure gauges
- pump selection
- pump sizing
- space requirements
- valve requirements
- variable speed control
- materials:
 - acrylonitrile butadiene styrene (ABS)
 - composite pipework
 - copper (Cu)
 - cross-linked polyethylene (PE-X)
 - polypropylene (PP)
 - polybutylene (PB)
 - ductile iron cement lined (DICT)
 - other approved materials
 - fittings and fixtures
 - protective coatings
- jointing methods:
 - brazing
 - compression
 - electrofusion welding
 - flaring
 - mechanical joints
 - rubber ring joints
 - screwing
 - soldering
 - solvent cement welding
 - other approved jointing methods
- installation requirements:
 - bedding
 - fire rating of penetrations
 - clipping
 - installation details
 - jointing requirements
 - level of workmanship
 - manufacturer-recommended specific fixings
 - pipe support
- delivery systems:
 - constant flow variable speed pumps

- gravity feed
- hydropneumatic
- mains pressure system
- testing:
 - air pressure
 - defect inspection
 - hydrostatic
 - mains pressure
 - performance
 - quality assurance (QA) audit
- commissioning schedule inclusions:
 - disinfection
 - flow test
 - leak check
 - pressure test
 - system certification
 - system defects
 - system functions as per design
 - system purge
 - valve operation
- operation and maintenance manual inclusions:
 - as installed drawings
 - certification documentation
 - maintenance schedules
 - manufacturer brochures and technical information
 - results of commissioning test
 - valve function.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM5012 Design complex stormwater and roof drainage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Application and Elements and Performance Criteria 4.4.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM5012A Design complex stormwater and roof drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design complex stormwater and roof drainage systems for commercial, industrial and residential properties.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit requirements are typically carried out by experienced people such as hydraulic design consultants or persons in a supervisory capacity in relation to plumbing services.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Identify design parameters.
 - 1.1 Determine design scope from plans, specifications and client brief.
 - 1.2 Identify applicable regulatory and legislative requirements for the design of complex stormwater and roof drainage systems.
 - 1.3 Apply sustainability principles and concepts as part of the design process.
 - 1.4 Account for the safety of system users or building occupants.
 - 1.5 Determine and estimate rainfall intensity and volume using measurements of different catchment areas.
 - 1.6 Analyse overland flood path affecting the property and buildings.
 - 1.7 Research and evaluate other information likely to impact the stormwater and roof drainage system design.
- 2 Plan system components.
 - 2.1 Plan and evaluate strategies for harvesting and re-using rainwater.
 - 2.2 Plan and evaluate methods of collection and disposal of roof surface run-off water.
 - 2.3 Plan and evaluate stormwater detention and retention systems and first-flush stormwater systems.
 - 2.4 Determine and specify the most suitable methods of preventing backflow of sub-soil and stormwater into buildings.
 - 2.5 Plan and evaluate treatment and disposal options for stormwater discharge.
 - 2.6 Plan layout of system components according to design parameters and site limitations and coordinate with other services.
- 3 Design and size systems.
 - 3.1 Apply regulatory requirements, Australian Standards and codes to all aspects of the stormwater and roof drainage system design.

- 3.2 Calculate and specify storage volume, pump capacity and discharge pipe size required for stormwater pumping systems as necessary.
 - 3.3 Design stormwater systems requiring pumping.
 - 3.4 Design, select, size and detail system components using appropriate calculations, software applications and approved materials.
 - 3.5 Specify correct installation, laying and jointing procedures for approved materials and components.
- 4 Prepare documentation.
 - 4.1 Prepare client brief of the preferred design.
 - 4.2 Prepare plans and specifications.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual, including information on how to properly and safely maintain the system.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM5012A Design complex stormwater and roof drainage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM5012 Design complex stormwater and roof drainage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Application and Elements and Performance Criteria 4.4.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM5012A Design complex stormwater and roof drainage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details of a complex stormwater and roof drainage system for a site incorporating a high-rise mixed development building within a wide-span multiple building project (such as a school), including:
 - specification
 - access chambers
 - grade of drains
 - holding pits
 - collection sumps
 - detention, retention and harvesting systems
 - disposal methods for stormwater catchments to council or utility provider's drainage network or disposal on-site
 - other system components
- using appropriate design software to produce detailed drawings and layout plans, including long sections and cross-sections of the designed system
- applying sustainability principles and concepts throughout to achieve a star rating under the Green Building Council of Australia rating scheme
- evaluating health risks associated with stormwater and roof drainage systems and action as required within the system design.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- relevant codes, Australian standards and specifications:
 - Australian rainfall and run-off (ARR) guidelines
 - AS/NZS 3500 Plumbing and drainage set
 - manufacturer specifications
 - National Construction Code (NCC)
 - building codes
 - work health and safety (WHS) and environmental requirements
 - plumbing regulations
- terminology and definitions used in hydraulic design
- computer-aided design (CAD) software
- installation methods used in hydraulic systems
- hazards associated with devices and systems used in the hydraulic sector
- environmental requirements:
 - clean-up protection
 - stormwater protection
 - waste management
 - water quality management
- quality assurance requirements:
 - Environmental Protection Agency (EPA)
 - internal company quality assurance policy and risk management strategies
 - International Standards Organisation (ISO)
 - site safety plan
 - workplace operations and procedures
- safe work procedures relating to planning, sizing and documenting layout of pipework and fixtures
- local government requirements:
 - Integrated Planning Act (IPA)
 - standard drawings and details
 - town planning requirements
- treatment requirements such as:
 - screens
 - silt traps
 - solid removal systems
- plans and documentation relevant to the design:
 - site plans
 - cross-sections
 - details
 - elevations
 - sections
 - civil drawings

- contour levels
- existing services
- reduced levels
- manufacturer requirements and specifications
- catchment area analysis
- stormwater design
- surveys
- system components:
 - access chambers (manholes)
 - channels
 - culverts
 - downpipes
 - fire rating of penetrations
 - grated pits
 - gullies
 - guttering
 - inspection chambers
 - inspection openings
 - kerbs
 - piping
 - pits
- treatment options for stormwater discharge:
 - grass and rock swales
 - lagoons
 - momentum diffusers
 - ponds
 - screens
 - silt traps
 - traps
 - other removal systems as determined
- disposal options for stormwater discharge:
 - connection to stormwater mains
 - creeks
 - harbour
 - kerb and street channels
 - lakes
 - on-site harvesting and reuse
 - rainwater collection systems, including tanks and dams
 - rivers
 - streams

- determining rainfall intensities by:
 - average rainfall intervals
 - roof, surface and subsurface calculations
 - site location
 - time and concentration
- catchment areas:
 - land surface catchment areas, including a variety of surface conditions such as grassed and paved areas
 - roof catchment areas
- stormwater drainage systems:
 - access chambers (manholes)
 - collection sumps
 - detention and retention
 - grade of drains
 - harvesting
 - holding pits
 - pump discharge
- approved piping materials:
 - concrete
 - earthenware or vitrified clay pipe (VCP)
 - fibre cement (FRC)
 - polyvinyl chloride (PVC)
 - other approved materials
- approved fittings:
 - bends
 - grates
 - gullies
 - junctions
 - non-return valves
- stormwater systems requiring pumping:
 - holding tanks
 - overflow provisions
 - pump and controls
 - rising main
- methods of applying sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - harvesting and reuse
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - effect on the environment due to overflow or leakage

- consideration of the Green Building Council of Australia rating scheme
- specification and user manuals which include information on:
 - commissioning
 - bedding
 - support
 - concrete support and detailing specialised components
 - jointing
 - access chambers (manholes)
 - manufacturer requirements
 - materials
 - pumps
 - WHS
 - testing
 - workmanship.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM5013 Design complex (non-solar) heated water systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Elements and Performance Criteria 1.8.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM5013A Design complex (non-solar) heated water systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design complex (non-solar) heated water supply and distribution systems for buildings with 29 floors, inclusive of basement and fixtures on each level for residential, commercial and industrial applications. The unit includes circulating systems, fuel and energy loads and system selection.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires sound understanding of applicable legislation, standards and codes.

This unit's requirements are typically carried out by experienced tradespeople such as hydraulic design consultants or persons in a supervisory capacity in relation to plumbing services.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Evaluate design parameters.
 - 1.1 Establish scope of work for heated water supply and distribution systems from relevant Australian Standards, codes, plans, specifications and client brief.
 - 1.2 Analyse and apply statutory and regulatory requirements for the design of complex (non-solar) heated water supply and distribution systems.
 - 1.3 Apply sustainability principles and concepts as part of the design process.
 - 1.4 Establish performance requirements considering the safety of system users and building occupants, including the control of Legionella bacteria.
 - 1.5 Conduct research, including a desktop study to outline design parameters.
 - 1.6 Interpret manufacturer requirements and trade and technical manuals for the design of heated water systems.
 - 1.7 Conduct a cost-benefit analysis to compare a range of materials and system designs.
 - 2 Plan and detail system components.
 - 2.1 Plan layout of pipework systems and type and location of fittings and valves.
 - 2.2 Detail thermostatic mixing, tempering and control valves for a range of applications using appropriate symbols.
 - 2.3 Plan and detail circulating heated water supply systems.
 - 2.4 Plan and detail warm water systems, including disinfection and biocontrol measures.
 - 2.5 Conduct calculations to determine water heating sizing and detail methods for the control of expansion.
 - 2.6 Calculate pipe sizes and design pipe supports for a range of applications.
 - 2.7 Detail manifolded heated water units for a range of water heaters and specify safe trays and overflows.
 - 2.8 Specify approved materials and jointing methods and insulation materials and installation requirements for a

- range of water heaters and heated water systems.
- 2.9 Provide allowance for expansion and contraction.
 - 2.10 Include acoustic performance of the system in plans.
- 3 Design and size systems.
- 3.1 Design complex (non-solar) heated water supply and distribution systems using plans and details of system components and established design parameters.
 - 3.2 Design suitable system approaches.
 - 3.3 Design and size system using manufacturer's design information and calculations.
 - 3.4 Calculate pipe sizes, velocities and pressures according to manufacturer's piping design requirements.
- 4 Prepare documentation
- 4.1 Prepare client brief of the preferred design.
 - 4.2 Prepare plans and specifications.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM5013A Design complex (non-solar) heated water systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM5013 Design complex (non-solar) heated water systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Elements and Performance Criteria 1.8.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM5013A Design complex (non-solar) heated water systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and planning the layout details for complex (non-solar) heated water systems for a high-rise mixed development building to a minimum of 29 floors inclusive of a basement, including fixtures on each level and using two methods of providing heated water:
 - one system to be gas only
 - one system incorporating an alternative energy efficient heat source, for example, a commercial heat pump with boosted system
- preparing documentation, including:
 - heat source
 - flue arrangements
 - flow and return systems
 - insulation requirements
 - manifold systems
 - provision for expansion
 - temperature control device
- applying sustainability principles and concepts throughout to achieve a star rating under the Green Building Council of Australia rating scheme
- evaluating health risks associated with heated water supplies and actioning as required within the system design.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- common terminology and definitions used in design of complex (non-solar) heated water systems
- application of National Construction Code (NCC), relevant Australian Standards, codes and manufacturer specifications, including:
 - Acts and regulations
 - AS/NZS 3500 Plumbing and drainage set
 - local government and health department requirements
- installation methods and hazards identified in relation to devices and systems used according to relevant Australian Standards, codes and standard operating procedures
- nature of materials used and effects of performance under various conditions
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- cost–benefit analysis considerations for the selection of materials and systems:
 - enabling cost effective choices without compromising the integrity of the project
 - expected design life
 - design style
 - associated labour costs
 - material costs
 - safety factors
 - speed of installation
 - suitability of materials
 - range of system choices
- requirements from manufacturer:
 - material specifications
 - heater maintenance and servicing
 - provision for heater pressure and temperature discharge
 - pump tables
 - sizing tables
 - recommended specific fixings for pipework
 - technical and trade manuals
- sources of information to support the design process:
 - architectural and building plans
 - developer plans
 - building applications
 - brochures
 - forms
 - policies
 - other reports as available

- layout of pipework systems:
 - dead leg
 - pressurised
 - thermo convection
 - circulating
- types of fittings:
 - bends
 - tees
 - unions
- types of valves:
 - backflow prevention
 - cold water expansion
 - isolating
 - non-return, including high pressure non-return
 - pressure limiting
 - pressure relief
 - strainers
 - temperature control
- types of thermostatic mixing and tempering valves:
 - bimetallic types
 - wax capsule
- circulating heated water supply system details:
 - circulating pump specification
 - dead leg minimisation
 - flow and return pipework
 - circulation
 - pipe insulation
 - thermal convection circulating
- heat trace systems:
 - installation requirements
 - running costs
 - serviceability
- calculations for sizing water heaters:
 - coefficient of expansion
 - daily flows
 - energy consumption
 - heat losses
 - mixed temperatures
 - peak demand
 - recovery times

- size and quantity of heated water required
- standby versus continual flow
- tariffs
- water expansion
- methods for the control of expansion:
 - U-bends
 - coiled loop
 - lyre bend
 - offset bends
 - proprietary expansion control devices
- pipe supports:
 - anchors
 - bracket spacing
 - corrosion protection
 - hanging brackets
 - material requirements
 - provision for expansion
 - saddles
 - wall and ceiling brackets
- manifolding heated water units:
 - balanced flow conditions and valves
 - pressure relief requirements
- water heater inclusions:
 - continuous flow
 - heat transfer
 - pressure storage systems
 - open vented storage systems
- sources of generated heat:
 - electricity
 - gas
 - heat pump
 - solar
 - solid fuel
 - waste heat
- safe trays and overflows:
 - design
 - discharge
 - materials
 - sizes
- materials:

- pipe materials as specified:
 - copper
 - composite
 - polymer
 - other approved materials
- flue materials including stainless steel
- ancillary material:
 - air relief valve
 - heaters
 - fittings and fixtures
 - insulation
 - pumps
 - valves
- jointing methods:
 - brazing
 - compression
 - electrofusion welding
 - flaring
 - mechanical joints
 - threading
- insulation materials:
 - fibre glass
 - foam
 - metal sheathing
 - rock wool
 - other approved materials
- installation requirements:
 - fire rating of penetrations
 - level of workmanship
 - manufacturer-recommended specific fixings
 - pipe support
 - provision for expansion
 - serviceability and access
- circulating systems:
 - approved pressure pipes and fittings
 - balancing valves
 - circulating pump and controls
 - isolating valves
 - thermo cycle
 - temperature gauge

- pump sizing to meet calculated flow conditions
- methods of applying sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - selection of energy efficient water heater
 - water efficiency
 - consideration of the Green Building Council of Australia rating scheme
- types of plans produced using computer software and drawing equipment:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - schematics
 - sections
- specification:
 - support
 - jointing
 - flow requirements
 - manufacturer requirements
 - materials
 - residual pressures and temperature
 - WHS
 - specialised components
 - testing
 - valve selection
 - water treatment
 - workmanship
- testing for:
 - air pressure
 - defect inspection
 - flue operation
 - hydrostatic
 - mains pressure
 - performance
 - quality assurance (QA) audit
- commissioning schedule information:
 - balancing the system
 - checking and flushing the system

- disinfection
- flow test
- flue operation
- leak check
- pressure test
- system certification
- system defects
- system functions as per design
- system purge
- temperature setting
- valve operation
- operation and maintenance manual information:
 - as installed drawings
 - results of commissioning test
 - certification documentation
 - heater details, settings and operations
 - maintenance schedules
 - manufacturer brochures and technical information
 - valve function.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPCM5014 Design sewer infrastructure systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Elements and Performance Criteria 5.4.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPCM5014A Design sewer infrastructure systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design and document sewer infrastructure systems for residential development of 50 properties. This includes specifying responsibilities, procedures and safety standards for sewerage equipment, construction, soil classification, pipe laying techniques and trench construction. The unit also covers analysing factors relating to pumping and tunnelling and supervising the installation of a sewer infrastructure system.

This unit covers requirements for competent workplace performance in a consultancy or supervisory capacity in relation to plumbing services and hydraulics.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare and implement 1.1 Identify and apply main utility sewer design and sizing

- sewer contracts.
- procedures.
- 1.2 Document required qualifications, roles and responsibilities of local authority personnel and contracted parties qualified to install sewers.
- 2 Plan and detail system components.
- 2.1 Analyse soil classification, characteristics and types from test results.
- 2.2 Detail trenching safety procedures, specifying backfilling and compaction methods.
- 2.3 Plan layout of pipework systems, including the type and location of fittings, valves and controls.
- 2.4 Specify pipe laying, dewatering and testing procedures for installation of pipework of varying sizes.
- 2.5 Calculate self-cleaning velocities, pipe size and grade, and ventilation requirements for a range of systems.
- 2.6 Detail sewer connections, access chambers, bedding material and support systems.
- 2.7 Determine size and detail requirements for pump station, pumps, controls and equipment.
- 2.8 Specify approved materials, jointing methods and installation requirements for sewer infrastructure systems.
- 2.9 Identify maintenance procedures of the system.
- 3 Evaluate design parameters.
- 3.1 Establish scope of work for sewer infrastructure systems.
- 3.2 Determine design requirements from relevant Australian standards, codes, plans, specifications and client brief.
- 3.3 Conduct cost–benefit analysis comparing a range of pipe materials and system design.
- 3.4 Analyse and apply statutory and regulatory requirements and relevant Australian Standards and codes for the design of sewer infrastructure systems.
- 3.5 Obtain trade and technical manuals and interpret

- manufacturer requirements.
- 3.6 Conduct additional research, including a desktop study to outline design parameters.
 - 3.7 Determine factors that contribute to quality, safety and time efficiency.
 - 3.8 Determine point of connection to the authority's system.
 - 3.9 Specify safety procedures and regulations for trench safety and for pumping stations and establish performance requirements.
 - 3.10 Assess pipe sizes using equivalent population (EP) density.
- 4 Design and size systems.
- 4.1 Identify easements and location for sewer infrastructure systems, including pumping rising mains.
 - 4.2 Design sewer infrastructure systems for a range of applications.
 - 4.3 Design and detail sewer long sections.
 - 4.4 Design pump rising main systems.
 - 4.5 Design pumping stations.
 - 4.6 Apply computer software packages to design and size sewer infrastructure system.
 - 4.7 Determine and design ventilation requirements.
 - 4.8 Apply sustainability principles and concepts throughout the design process.
- 5 Prepare documentation.
- 5.1 Prepare client brief of the desired design.
 - 5.2 Prepare plans and specification for a range of sewer infrastructure systems.
 - 5.3 Prepare testing and commissioning schedule.
 - 5.4 Produce operation and maintenance manual, including information on how to properly and safely maintain the

system.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPCM5014A Design sewer infrastructure systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPCM5014 Design sewer infrastructure systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 5.4.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM5014A Design sewer infrastructure systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the installation and layout details for a sewer infrastructure system for a residential development of 50 properties, incorporating a gravity system and pumping station, to include:
 - sewer reticulation mains
 - pump station
 - pump rising main
 - ventilation
 - odour control
- evaluating and documenting design parameters to relevant Australian standards and codes, and regulatory, client and manufacturer requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in the design of sewer infrastructure systems
- application of statutory and regulatory requirements and relevant Australian standards and codes:
 - Acts, regulations and Commonwealth, state or territory and local government policies
 - AS/NZS 3500 National plumbing and drainage
 - AS 2200 Design charts for water supply and sewerage
 - Environmental Protection Authority (EPA)
 - National Construction Code (NCC)

- Sewerage Code of Australia
- other relevant Australian standards and codes
- utility provider's design standards -e.g. Water Corporation (WA), Urban Utilities (QLD)
- scope of work requirements:
 - interpreting plans and specifications
 - sizing and documenting layout sewer infrastructure system
- design requirements:
 - architectural plans
 - builder specifications
 - fire safety requirements
 - owner requirements
 - pipework identification
 - flow requirements and sizing of pipework
 - ventilation requirements
- cost–benefit analysis comparing the range of suitable materials and system choices available to enable cost-effective choices without compromising the integrity of the project
- nature of materials used and effects of performance under various conditions:
 - cast iron
 - concrete
 - vitrified clay pipes (VCP)
 - polyethylene (PE)
 - polypropylene (PP)
 - unplasticised polyvinyl chloride (uPVC)
 - other approved materials
- manufacturer requirements:
 - material specifications
 - collection and storage systems
 - design and installation
 - equipment installation
 - pump installation
 - technical manuals
- trench safety procedures:
 - conditions affecting trench stability
 - condition of soils disturbed by previous excavations
 - effect of water on excavations
 - effects of moisture content on excavated trenches
 - traffic and vibrations
 - confined space safety requirements e.g. for exhaust emissions

- prevention of trench collapse
- trench collapse procedures
- trench collapse inspection procedures
- trench excavation methods used for different:
 - backfilling methods
 - bedding methods
 - depth
 - slope
 - support systems
 - types
- safety procedures with reference to:
 - advisory standards
 - compliance standards
 - industry standards
 - Work Health and Safety Act
 - other acts, codes or regulations relating to trenching
 - working in confined spaces
- layout of pipework systems:
 - gravity
 - pumped and rising mains
 - vacuum
 - identification of easements and location for sewer infrastructure systems, including pumping rising mains
 - layout requirements to:
 - not unduly affect building integrity and aesthetic appeal
 - apply principles of economy, serviceability, durability and fitness for use
- characteristics and application of different fittings, valves and controls:
 - fittings
 - bends
 - flanges
 - junctions
 - inspection openings
 - unions
 - valves non-return and isolation
 - controls
 - level
 - alarms
 - management communication systems
- pipelaying procedures:
 - cutting, handling and storage procedures

- fittings used for sewerage work
- jointing methods and procedures
- laying procedures for pipework
- methods of dewatering trenches
- methods of grading and maintaining pipe direction and reduced levels
- methods of placing bedding materials, encasing pipes, backfilling and compacting
- methods of testing sewer drains
- methods of pressure testing pump rising mains
- processes for calculating pipe size, pipe grade and ventilation requirement:
 - determination of flow and loadings
 - gradient calculations
 - equivalent population (EP) density
 - interpretation of design charts and tables
 - pipe sizing calculations
 - projected flows
 - pumping flow rates
 - reduced level calculations
 - self-cleaning pipe velocities
 - stormwater infiltration
 - system ventilation
- access chamber details:
 - access
 - benching
 - connections
 - covers
 - flow and gradient
 - open and closed channel
 - sizing
- pump station, pumps, controls and equipment requirements:
 - access covers
 - access ladders
 - automatic controls
 - capacity
 - corrosion-resistant materials
 - emergency storage and power supply
 - impeller sizing and selection
 - inlet and outlet design
 - installation and mounting
 - odour control
 - macerator requirements

- management communication system
- provision for servicing
- pump selection
- pump well sizing
- space requirements
- valves
- ventilation
- warning system
- characteristics and application of different jointing methods
- installation requirements:
 - bedding
 - pipe protection
 - cover
 - corrosion
 - impact
 - level of workmanship
 - manufacturer-recommended specific fixings
 - pipe support
 - provision for pipe movement
 - serviceability and access
- rising main systems:
 - approved pressure pipe and fittings
 - calculated rise and pump delivery requirements
 - environmental protection
 - pump sizing to meet calculated flow conditions
 - self-cleaning pipe velocities
 - odour control
- the use and limitations of computer software packages including manufacture and proprietary design software
- plans and specifications requirements:
 - axonometric
 - cross-sections
 - details
 - elevations
 - isometrics
 - schematics
 - site
 - sections
 - specifications
 - bedding

- commissioning
- excavation requirements
- support
- concrete support and detailing specialised components
- jointing
- access chambers (manholes)
- manufacturer requirements
- materials
- piping
- pumps
- pumping stations
- WHS
- testing
- workmanship
- testing methods:
 - air pressure
 - drainage inspection
 - hydrostatic
 - performance
 - compliance with authorities' discharge requirements
 - quality assurance (QA) audit
- commissioning schedule requirements:
 - system certification
 - check for foreign material
 - containment
 - leak check
 - operational
 - pumping
 - system defects
 - system functions as per design
 - ventilation
 - odour control
 - WHS compliance
- operation and maintenance manual requirements:
 - as installed drawings
 - certification documentation
 - emergency procedures
 - results of commissioning test
 - maintenance schedules
 - manufacturer brochures and technical information

- odour control
- WHS requirements
- ventilation
- sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - consideration of the Green Building Council of Australia rating scheme
- principles of technology in the design of sewer infrastructure systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR2021 Locate and clear blockages

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Elements and Performance Criteria 1.2 and 3.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPDR2021A Locate and clear blockages.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to locate and clear blockages in sanitary plumbing and drainage systems, using a range of equipment, including closed-circuit television (CCTV).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Determine location of blockage and clearing requirements. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| | 1.3 Select appropriate tools and equipment, including |

personal protective equipment (PPE).

- 2 Locate and clear blockage.
 - 2.1 Identify pipe section containing blockage using closed-circuit television (CCTV), as appropriate.
 - 2.2 Select and use appropriate blockage clearing equipment according to the job requirements and manufacturer's requirements.
 - 2.3 Remove blockage without causing damage to pipework and fittings.
 - 2.4 Flush and test system to ensure adequate operation.
- 3 Clean up.
 - 3.1 Clear the work area and dispose of materials in accordance with state and territory legislation and workplace policies and procedures.
 - 3.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPDR2021A Locate and clear blockages.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR2021 Locate and clear blockages

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Elements and Performance Criteria 1.2 and 3.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPDR2021A Locate and clear blockages.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- using a closed-circuit television (CCTV) camera to locate the cause of the blockage in drainage pipework
- using a mechanical method to clear blockage in drainage pipework.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics of different pipes and fittings.
- different types of tools and equipment, their application and method of operation:
 - manually operated drain cleaning, including plungers and rods
 - mechanically operated drain clearing machines and attachments
 - CCTV
 - pipe locating equipment
 - chemical applications for cleaning
- processes for clearing blockages
- how to access relevant drainage layout information for the job
- work health and safety (WHS) requirements for locating and clearing blockages.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR2025 Install stormwater and sub-soil drainage systems and drain work site

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Elements and Performance Criteria 4.1.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPDR2024A Install stormwater and sub-soil drainage systems, and CPCPDR2025A Drain work site. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install stormwater and sub-soil drainage systems to an approved point of discharge.

It includes the operation of pumps to temporarily or permanently drain a work site of unscreened roof water, sub-soil water and surface water.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Access, read and determine stormwater and drainage requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's

- specifications and jurisdictional requirements.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check serviceability of appropriate tools and equipment, including personal protective equipment (PPE).
- 3 Install storm water and sub-soil drainage.
 - 3.1 Locate and set out position of stormwater and drainage and determine levels and gradients from set points.
 - 3.2 Excavate trench to specified depth and width and grade using manual or mechanical means.
 - 3.3 Measure, cut and install pipework to align with connection points.
 - 3.4 Conduct a pressure test on the stormwater installation.
 - 3.5 Fit covers and inspection openings.
- 4 Drain worksite.
 - 4.1 Position and construct sediment controls to meet environmental requirements.
 - 4.2 Install submersible pump in a sump or well with inlet and discharge point to the specified location and levels.
- 5 Clean up.
 - 5.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 5.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPDR2024A Install stormwater and sub-soil drainage systems, and CPCPDR2025A Drain work site.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR2025 Install stormwater and sub-soil drainage systems and drain work site

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Elements and Performance Criteria 4.1.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPDR2024A Install stormwater and sub-soil drainage systems, and CPCPDR2025A Drain work site. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing a stormwater and a sub-soil drainage system, including:
 - connecting stormwater from two downpipes to an approved point of discharge with a minimum length of 5 metres
 - connecting sub-soil drainage to a stormwater pit with a minimum length of 5 metres
- draining a work site, including:
 - using a submersible pump to drain water with a depth of at least 500 mm from a pit, trench or excavation to an approved point of discharge.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- terminology relating to the installation of stormwater and subsoil drainage systems and to draining a work site
- processes, procedures and techniques for installing stormwater drainage systems
- approved points of discharge
- retention and detention systems and charged systems
- excavation techniques and shoring methods and systems
- site isolation and traffic control responsibilities and authorities
- stormwater pits
- how to locate underground services
- functional and operational features of plant, equipment, and submersible pumps

- how to access relevant information, relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used for the installation of stormwater and drainage systems
- work health and safety (WHS) requirements for the installation of stormwater and drainage systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR2026 Install prefabricated inspection openings and inspection chambers

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 3.2.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPDR2026A Install prefabricated inspection openings and enclosures. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install prefabricated inspection openings and inspection chambers in new or existing domestic or commercial contexts.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|---|
| 1 Identify installation requirements. | 1.1 Access, read and determine prefabricated inspection openings and chamber installation methods from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
|---------------------------------------|---|

- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment, including personal protective equipment (PPE).
- 3 Install prefabricated inspection openings and enclosures.
 - 3.1 Mark out and excavate site and prepare for installation according to relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.2 Install prefabricated concrete or polymer inspection opening and chamber, including the connection of inlet and outlet pipes according to relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPDR2026A Install prefabricated inspection openings and enclosures.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR2026 Install prefabricated inspection openings and inspection chambers

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 3.2.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPDR2026A Install prefabricated inspection openings and enclosures. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing an approved prefabricated concrete or polymer inspection opening or chamber of a minimum depth of 500 mm, including the connection of the inlet and outlet pipes below ground on a minimum of one stormwater and one sanitary drainage application.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics and application of pipe fittings and jointing techniques
- processes for installing prefabricated inspection openings and chambers
- characteristics, uses and limitations of concrete or polymer prefabricated inspection openings and chambers and other approved materials
- how to access relevant information, including relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used for installing prefabricated inspection openings and inspection chambers
- work health and safety (WHS) requirements for installing prefabricated inspection openings and inspection chambers.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR3021 Plan layout and install below ground sanitary drainage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Pre-requisite unit and Elements and Performance Criteria 1.3.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is not equivalent to CPCPDR3021A Plan layout of a residential sanitary drainage system, and CPCPDR3022A Install below ground sanitary drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to plan the layout of and install below ground sanitary drainage systems for sewage and waste discharge from sanitary fixtures to approved points of connection in new or existing domestic and commercial structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3024 Prepare simple drawings

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------|---|
| 1 Identify installation | 1.1 Access, read and determine installation requirements from job plans and specifications, relevant Australian |
|-------------------------|---|

- requirements. Standards, codes, manufacturer's specifications and jurisdictional requirements.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Plan and draw the layout of a sanitary drainage system.
- 2 Prepare for work.
- 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Install sanitary drainage.
- 3.1 Establish and set out fixture locations, levels and heights to align with existing or new connection points.
 - 3.2 Excavate trench to specified depth and grade using manual tools and equipment or mechanical means.
 - 3.3 Fabricate and install sanitary drainage pipework, connecting to a new or existing system and test installation.
 - 3.4 Prepare an as constructed drawing.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPDR3021A Plan layout of a residential sanitary drainage system, and CPCPDR3022A Install below ground sanitary drainage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR3021 Plan layout and install below ground sanitary drainage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Pre-requisite unit and Elements and Performance Criteria 1.3.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is not equivalent to CPCPDR3021A Plan layout of a residential sanitary drainage system, and CPCPDR3022A Install below ground sanitary drainage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- planning the layout and install a vented below-ground sanitary drainage system with a minimum length of 10 metres to connect a:
 - bathroom group including floor waste gully with fixtures connected
 - WC
 - laundry trough
 - kitchen sink
 - soil or waste stack to a minimum of two floor levels

The system must include inspection openings and shafts and connection to an approved point of discharge, provision for an overflow relief gully or reflux valve as required, and provision for articulation in drainage for soil movement.

- testing a sanitary drainage system
- cutting in a branch to an existing drain to connect a new WC or another fixture.
-

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- terminology relating to the installation of below-ground sanitary drainage systems
- principles of drainage design and working drawings conventions, symbols and abbreviations
- trench support

- how to obtain, transfer and record levels and heights
- sewerage inspection chambers
- approved materials and their characteristics and application for the installation of below-ground sanitary drainage systems
- processes, procedures and techniques for the installation of below-ground sanitary drainage systems, including testing
- how to access relevant information, including codes and Australian standards
- work health and safety (WHS) requirements for planning the layout and for installation of below-ground sanitary drainage systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR3023 Install on-site domestic wastewater treatment plants and disposal systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPDR2022A Install domestic treatment plants, and CPCPDR3023A Install on-site disposal systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install an approved prefabricated wastewater treatment plant and on-site effluent disposal.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare the work. | 1.1 Access, read and determine treatment plant and disposal system type installation requirements from relevant job plans and specifications, codes Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |

- 1.3 Create a materials list and collect materials.
 - 1.4 Select and check serviceability of appropriate tools and equipment including personal protective equipment (PPE).
- 2 Install treatment plant and disposal system.
 - 2.1 Set out and excavate site to required depth.
 - 2.2 Prepare the excavated base for installation.
 - 2.3 Install a treatment plant and on-site disposal system.
- 3 Clean up.
 - 3.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 3.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPDR2022A Install domestic treatment plants, and CPCPDR3023A Install on-site disposal systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR3023 Install on-site domestic wastewater treatment plants and disposal systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPDR2022A Install domestic treatment plants, and CPCPDR3023A Install on-site disposal systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing an approved domestic wastewater treatment plant
- installing an on-site disposal system with connection to the outlet of the treatment plant, including an irrigation system or a transpiration or absorption trench with a minimum length of 3.0 metres.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- effluent treatment and disposal
- types of domestic treatment plants
- types of onsite effluent disposal systems
- treated-water irrigation systems in accordance to relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- approval requirements for onsite treatment plants
- system operations and characteristics of sewage treatment
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install an on-site domestic wastewater treatment plant and disposal system
- work health and safety (WHS) requirements for installing an on-site domestic wastewater treatment plant and disposal system.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR3024 Maintain and service domestic treatment plants and onsite sewerage facilities

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to maintain and service domestic treatment plants and onsite sewerage facilities.

The unit covers maintaining system components, conducting and analysing effluent quality tests and maintaining systems on new or existing domestic or commercial structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPDR4013 Design and size domestic treatment plant disposal systems

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Identify and arrange work health and safety (WHS) and environmental requirements necessary to undertake the work. |
| | 1.2 Complete a site risk assessment, including hazards associated with exposure to wastewater and wastewater treatment facilities. |
| | 1.3 Develop procedures to minimise risk associated with identified hazards. |

- 2 Maintain components.
 - 2.1 Check operation of pumps and aerators to identify maintenance requirements.
 - 2.2 Perform maintenance of pump systems and components and aerators and replace as required.
 - 2.3 Clean membranes, filters, UV light tubes and ozone-producing equipment where appropriate.
 - 2.4 Measure sludge and scum levels in septic tanks and treatment plants.
 - 2.5 Analyse and maintain land application areas and piping systems.
 - 2.6 Determine appropriate procedures for loss of power and equipment failure.
 - 2.7 Perform maintenance of relevant components and replace system devices where required.

- 3 Conduct and analyse effluent quality tests.
 - 3.1 Calibrate and use commercial testing equipment to conduct water quality tests and record results in accordance with legislative requirements.
 - 3.2 Collect, prepare and send water samples to an accredited laboratory for effluent quality tests where appropriate.
 - 3.3 Identify rectification work required from effluent quality test results.
 - 3.4 Perform rectification work as required.

- 4 Maintain systems.
 - 4.1 Analyse and determine the correct treatment processes for a range of small decentralised treatment facilities.
 - 4.2 Maintain a range of wastewater treatment facilities in compliance with legislation.
 - 4.3 Maintain black and/or grey water systems to comply with end user, water and regulatory quality parameters.

- | | |
|---|---|
| 5 Complete documentation and report outcomes. | 5.1 Complete service reports and correspondence outlining maintenance issues. |
| | 5.2 Provide advice to end user. |
| | 5.3 Produce an operation and maintenance schedule for end user. |
| | 5.4 Document and report outcomes to local authorities and property owners. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR3024 Maintain and service domestic treatment plants and onsite sewerage facilities

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- applying an operation and maintenance procedure for three of the following systems, ensuring a primary, secondary and tertiary system is selected:
 - primary treatment conventional septic tank
 - primary biological filter
 - secondary treatment aerated wastewater treatment plant
 - secondary treatment sand filter
 - tertiary ultraviolet (UV) disinfection and ozone oxidation
 - tertiary chlorine.

For each procedure the person must identify and report faults to appropriate person.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- disinfection technologies and land application systems
- system processes to reduce nutrients
- interpreting and applying test results for:
 - dissolved oxygen readings
 - clarity readings of wastewater
 - various air pressures on aerator
 - rectification of incorrect residual chlorine readings
 - calculation of pump duty
 - rectification of incorrect pH readings
- microbiology of wastewater constituents
- SI system of measures
- work health and safety procedures
- dissolved oxygen

- pH parameters
- air pressure from the aerator
- residual chlorine parameter
- pump operation
- pump duty
- infectious diseases
- types of wastewater treatment processes
- risks with working with wastewater
- types of land application areas
- maintenance procedures
- legislation and regulations relating to wastewater
- wastewater quality parameters
- areas of consideration for health and safety:
 - protective clothing and equipment
 - use of tools and equipment
 - workplace environment and safety
 - handling of materials
 - hazardous materials
 - handling of materials
 - hazard control
 - electrical
 - lifting safety
 - first aid requirements for injuries
 - personal hygiene
- areas of potential risk:
 - hygiene
 - biological
 - health
 - chemical
 - electrical
- types of hazards:
 - chlorine
 - influent
 - effluent
 - electrical
 - UV
 - ozone
 - pH correction chemicals
- correct operation of filters and pumps
- types of land application:

- absorption trenches and beds
- evapotranspiration beds
- mounds
- shallow sub-surface irrigation systems
- covered surface drip irrigation
- low pressure effluent drip irrigation systems
- above-ground irrigation
- constructed wetlands:
 - reed beds
 - lagoons
- devices used in effluent systems:
 - sludge recycling device
 - disinfecting device
 - dosing device
 - pumps
 - aerators
 - valves
- tests for effluent quality:
 - biochemical oxygen demand (BOD)
 - sludge
 - suspended solids
 - clarity
 - pH
 - dissolved oxygen
 - bacterial content (pathogenic organisms)
 - free chlorine
 - total nitrogen
 - total phosphorous
- rectification solutions:
 - recommended use of household products
 - adjustments to system
 - improvements to system
- result information inclusions:
 - summary of own investigations
 - local authority reports
 - reports by other testing agencies or authorities
- end users such as:
 - landowners
 - tenants
- how to access relevant information, including codes and standards

- tools, materials and equipment used to maintain and service domestic treatment plants and onsite sewerage facilities
- work health and safety (WHS) requirements for maintaining and servicing domestic treatment plants and onsite sewerage facilities.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR3025 Plan layout and install vacuum drainage systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to prepare for the layout and installation of sewage and waste discharge from fixtures to the point of connection in new or existing, domestic and commercial structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and determine installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |
| | 1.3 Plan and record layout of vacuum drainage system. |

- | | | | |
|---|--------------------------|-----|---|
| 2 | Prepare for work. | 2.1 | Establish fixtures and materials and calculate quantities. |
| | | 2.2 | Create a materials list and collect materials. |
| | | 2.3 | Select appropriate tools and equipment including personal protective equipment (PPE). |
| 3 | Install vacuum drainage. | 3.1 | Establish and set out levels and heights to align with existing or new connection points. |
| | | 3.2 | Perform installation of above ground vacuum drainage pipes in accordance with AS/NZS 3500.2 Plumbing and drainage – Sanitary plumbing and drainage. |
| | | 3.3 | Excavate trench to specified depth and grade using manual tools and equipment or mechanical means. |
| | | 3.4 | Compact and fill trench base to determined height. |
| | | 3.5 | Measure, cut and install vacuum drainage pipework. |
| | | 3.6 | Connect to new or existing system. |
| | | 3.7 | Check and test installation. |
| | | 3.8 | Prepare an as constructed drawing. |
| 4 | Clean up. | 4.1 | Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. |
| | | 4.2 | Clean tools and equipment, check for serviceability reporting any damage, store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR3025 Plan layout and install vacuum drainage systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- preparing an as constructed drawing to jurisdictional requirements
- planning and installing a vacuum drainage system with a minimum drain length of 3 metres vertical and 5 metres horizontal to connect a:
 - vacuum water closet (VWC) pan
 - buffer, both gravity drainage inlet and vacuum waste outlet
 - vacuum automatic interface unit (VAIU)
 - vacuum main pipeline to a vacuum station
- cutting in a branch to an existing drain connecting a new VWC pan and another buffer
- joining two branches together
- fabricating a vacuum reforming pocket both open and closed.

All installations must comply with and support fixings of pipe works.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- terminology relating to the installation of below- and above-ground vacuum drainage systems
- principles of vacuum drainage design, working drawings conventions, symbols and abbreviations
- trench support where applicable
- inspection openings
- approved materials, their characteristics and application for the installation of below- and above-ground vacuum drainage systems
- processes, procedures and techniques for the installation of below- and above-ground vacuum drainage systems, including testing
- how to access relevant information, including codes and standards

- tools, materials and equipment used to plan the layout and installation of below- and above-ground vacuum drainage systems
- work health and safety (WHS) requirements for planning the layout and installation of below- and above-ground vacuum drainage systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR4011 Design and size sanitary drainage systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPDR4011B Design and size sanitary drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design, size and document the layout of sanitary drainage systems for residential and commercial unit developments.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify system requirements.

1.1 Access, read and determine design requirements from plans, specifications, relevant manufacturer's requirements, Australian standards and jurisdictional requirements.

1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental

- requirements.
- 1.3 Determine fixtures, quantity, location and legal points of discharge.
- 2 Design and size system layout.
 - 2.1 Develop and size system layout in accordance with relevant manufacturer's requirements, Australian standards and jurisdictional requirements.
 - 2.2 Use the proposed design to identify and specify optimal materials required.
 - 2.3 Produce final system layout plans to relevant drawing design standards.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPDR4011B Design and size sanitary drainage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR4011 Design and size sanitary drainage systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPDR4011B Design and size sanitary drainage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details of a sanitary drainage system to an approved point of connection for:
 - a residential design that comprises at least eight dwellings (Class 1a), incorporating at least the following in each:
 - bath
 - two showers
 - three WCs
 - three basins
 - floor waste gullies
 - kitchen sink
 - laundry tub
 - clothes washing machine
 - a commercial design that comprises at least one water/oil separator
 - one commercial kitchen connecting to an approved trade waste facility and incorporating at least:
 - one commercial dishwasher
 - one commercial pot wash facility
 - one commercial glasswasher
 - bucket trap floor waste gullies
 - basin
 - a disabled bathroom incorporating a WC and basin

- three WCs across separate male and female toilet areas
- four basins across separate male and female toilet areas
- urinal
- completing design, sizing and documentation to meet regulatory requirements and client specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- processes to apply for trade waste installations
- characteristics and application of different pipe systems, including their fittings
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers for documentation
- computer-aided design (CAD) software
- impact of venting on design
- contour, reduced and invert levels
- process of treating trade waste to acceptable levels for discharge
- non-gravitational sewage systems
- properties and characteristics of trade waste applications:
 - grease arrestors
 - acid neutralisers
 - dry basket arrestors
 - oily water separators
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design, size and document the layout of sanitary drainage systems
- work health and safety (WHS) requirements for designing, sizing and documenting the layout of sanitary drainage systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR4012 Design and size stormwater drainage systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Element 2 title corrected. Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPDR4012B Design and size stormwater drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design, size and document the layout of surface and sub-soil stormwater drainage systems up to legal points of discharge to a residential dwelling (Class 1a), a commercial Class 6 building, and a unit complex comprising at least eight (Class 1a) dwellings.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify system requirements.

1.1 Access, read and determine design requirements from plans, specifications, relevant manufacturers requirements, Australian Standards and jurisdictional requirements.

- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Identify stormwater catchment and flow requirements.
 - 1.4 Select stormwater pipe size to conform to regulatory authorities and main or street kerb, including discharge flow and levels to verify grades and cover.
 - 1.5 Determine stormwater requirements for retention pit, silt and flotation arrestor pit, rainwater tank and stormwater overflow discharge locations to suit job requirements.
- 2 Design system layout.
- 2.1 Develop and size system layout in accordance with manufacturer's requirements, Australian standards and jurisdictional requirements.
 - 2.2 Use the proposed design to identify and specify optimal materials required.
 - 2.3 Produce final system layout plans to relevant drawing design standards.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPDR4012B Design and size stormwater drainage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR4012 Design and size stormwater drainage systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Element 2 title corrected. Performance Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPDR4012B Design and size stormwater drainage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details of a surface and sub-soil stormwater drainage system for:
 - a residential design that comprises a dwelling (Class 1a), and
 - a commercial Class 6 building, or
 - a unit complex comprising at least eight (Class 1a) dwellings.

The candidate must:

- include drainage to the legal point of discharge to the external stormwater drainage network
- complete the work according to development plans, specifications, Australian standards, workplace procedures and client specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the process of planning, sizing and documenting the layout of stormwater and sub-soil drainage systems
- catchment, rainfall intensity and run-off calculations
- characteristics and application of different pipe systems, including their fittings
- non-gravitational stormwater systems
- onsite stormwater management
- design concepts and performance measures for stormwater and sub-soil drainage systems

- principles of water flow and stormwater and sub-soil drainage
- contour, reduced and invert levels
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers for documentation
- computer-aided design (CAD) software
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design, size and document the layout of surface and sub-soil stormwater drainage systems up to legal points of discharge
- work health and safety (WHS) requirements to design, size and document the layout of surface and sub-soil stormwater drainage systems up to legal points of discharge.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPDR4013 Design and size domestic treatment plant disposal systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPDR4013B Design and size domestic treatment plant disposal systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design, size and document the layout of domestic treatment plant disposal systems for a residential design that comprises a dwelling (Class 1a).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify system requirements.

1.1 Access, read and determine design requirements from plans, specifications, relevant manufacturer's requirements, Australian Standards and jurisdictional requirements.

1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.

- 1.3 Obtain and confirm information for a suitable location for the land application area, reserve area and onsite land application of effluent.
- 2 Design system layout.
 - 2.1 Develop and size system layout in accordance with relevant manufacturer's requirements, Australian standards and jurisdictional requirements.
 - 2.2 Use the proposed design to identify and specify optimal materials required.
 - 2.3 Produce final system layout plans to relevant drawing design standards.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPDR4013B Design and size domestic treatment plant disposal systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR4013 Design and size domestic treatment plant disposal systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPDR4013B Design and size domestic treatment plant disposal systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout of a treatment plant disposal system for a residential design that comprises a dwelling (Class 1a), including details of:
 - treatment plant
 - disposal field
 - relationship of the above to any buildings, property boundaries, easements and other structures.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- design concepts and performance measures for domestic treatment plant disposal systems
- principles of the assessment of land capability for application of effluent
- principles, techniques and characteristics of effluent treatment and disposal, including the purpose of anaerobic bacteria
- properties and characteristics of landscape application areas
- site characteristics that may influence planning:
 - contour, reduced and invert levels
 - type of system chosen
 - soil category
 - design loading rates (DLR)
 - long term acceptance rate (LTAR)
 - number of people the system is to cater for
- identifying scope of work by waste processing method:
 - absorption by absorption trenches or transpiration beds
 - disposal by absorption, spray or recycling

- anaerobic or aerobic action
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers for documentation
- computer-aided design (CAD) software
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design, size and document the layout of domestic treatment plant disposal systems
- work health and safety (WHS) requirements for designing, sizing and documenting the layout of domestic treatment plant disposal systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS2021 Connect static storage tanks for fixed fire protection systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Duplicate Element and Performance Criteria 1.3 deleted.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS2021A Connect static storage tanks for fixed fire protection systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to connect storage tanks to fixed fire protection systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|---|
| 1 Identify installation requirements. | 1.1 Determine storage tank for fixed fire protection systems requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, |

work health and safety (WHS) and environmental requirements.

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check the serviceability of appropriate tools and equipment including personal protective equipment (PPE).

- 3 Install and test storage tank.
 - 3.1 Connect storage tank and associated pipework.
 - 3.2 Apply pipe supports and fixings.
 - 3.3 Connect tank piping, associated valves and materials to the suction side of the fire pumpset.
 - 3.4 Connect make up and quick fill pipework, associated valving and supports according to job specifications, relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
 - 3.5 Check jointing systems to ensure compliance with relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
 - 3.6 Conduct pressure testing on installed system.
 - 3.7 Test and confirm correct operation of quick fill and make up lines and valving.
 - 3.8 Record test data in required format.
 - 3.9 Complete documentation according to relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and

report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS2021A Connect static storage tanks for fixed fire protection systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS2021 Connect static storage tanks for fixed fire protection systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Duplicate Element and Performance Criteria 1.3 deleted.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS2021A Connect static storage tanks for fixed fire protection systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- connecting and testing an approved static storage tank to a fire protection pumpset in accordance with the relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements of a fire protection system
- connecting static storage tank downstream from backflow protection
- applying safety requirements throughout the work sequence, including electrical safety requirements
- communicating and working effectively and safely with others
- installing, setting and confirming operation of quick fill and make up lines and associated valving.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, application and limitations of different pipe fittings and fixture supports:
 - sectional tanks
 - steel or polymer storage tanks
 - tank linings
- processes, procedures and techniques of:
 - construction of fire protection tanks
 - fixing and joining
 - levelling and alignment
 - using measurements and formulas for calculating materials

- pressure test systems
- connecting static storage tanks
- function and operation of a range of valves, including backflow, associated with quick fill and make up lines and pump installations
- functional and operational factors of tools and equipment:
 - cutting
 - hand and power tools
 - lifting and load shifting equipment
 - testing equipment
- operation and components of fire sprinkler system pumpsets
- access relevant information, including job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
- work health and safety (WHS) requirements for connecting static storage tanks for fixed fire protection systems
- installation requirements for connecting static storage tanks for fixed fire protection systems, above and below ground pipework.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS2022 Install portable fire equipment

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 2.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS2022A Install portable fire equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and commission (excluding internal components inspections) of portable fire extinguishers, fire blankets and signage on new or existing, domestic or commercial structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------|---|
| 1 Plan the work. | 1.1 Access, read and determine portable fire equipment requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |

- 1.3 Identify extinguishing agents, weight and materials.
 - 1.4 Calculate and order materials and portable fire equipment.
 - 1.5 Determine priorities and plan and sequence tasks with others on site.
- 2 Prepare for work.
- 2.1 Create a materials list and collect materials.
 - 2.2 Check portable fire equipment against relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements, delivery docket and order form and report faults, as appropriate.
 - 2.3 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
 - 2.4 Prepare work area to support efficient installation of portable fire equipment.
- 3 Install portable fire equipment.
- 3.1 Set out installation location ensuring it is free of obstruction.
 - 3.2 Perform installation of supports, fixings and signage.
 - 3.3 Perform installation and verify working order of portable fire equipment.
 - 3.4 Commission installation according to yearly requirement of AS 1851 Routine service of fire protection systems and equipment.
 - 3.5 Complete installation or service report and submit within specified timeframes.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS2022A Install portable fire equipment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS2022 Install portable fire equipment

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 2.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS2022A Install portable fire equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- preparing for, installing and verifying the working order of the following fire equipment for an office complex (class 5 building):
 - portable water fire extinguisher
 - portable carbon dioxide (CO₂) fire extinguisher
 - portable powder fire extinguisher
 - fire blankets
 - signage.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- processes, procedures and techniques of:
 - installing and commissioning portable fire extinguishers according to regulatory requirements
- characteristic, application and limitation of approved materials and components
- statutory and authorities' requirements related to installing and commissioning portable fire equipment:
- SI system of measurement
- structural systems, building materials and building services related to the installation of fire extinguishers in accordance with AS 2444 Portable fire extinguishers and fire blankets
- extinguishing agents for portable fire extinguishers:
 - water

- CO2 gases
- dry chemical and chemical reaction suppression systems
- wet chemical
- foam
- how to access relevant information, including relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements for the installation and commissioning of portable fire equipment
- tools, materials and equipment used for the installation and commissioning of portable fire equipment
- work health and safety (WHS) requirements for the installation and commissioning of portable fire equipment.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3030 Design fire sprinkler systems using pre-calculated charts and tables

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3030A Design pre-calculated fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to design fire sprinkler systems using pre-calculated tables and charts.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Prepare for work. | 1.1 Obtain scope of work requirements from information and quality requirements, including relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
|---------------------|---|

- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Set up work area to enable sprinkler system to be designed efficiently.
- 2 Identify design requirements.
- 2.1 Obtain data from relevant job specifications required to prepare design.
 - 2.2 Identify building classification and hazard ratings that apply to the fire sprinkler system being designed.
 - 2.3 Identify ceiling type and constructions material.
 - 2.4 Identify all features of that building that might obstruct the spray pattern of the sprinkler, i.e. bulkheads, beams, columns, etc.
 - 2.5 Identify sprinkler head type from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
 - 2.6 Identify the requirement for concealed space sprinklers.
- 3 Design sprinkler system.
- 3.1 Identify and locate the control valves.
 - 3.2 Lay out sprinkler locations according to AS 2118.1 Automatic fire sprinkler systems – General systems and manufacturer data sheets.
 - 3.3 Lay out the range and distribution pipework in an economical manner.
 - 3.4 Determine the most remote last range type.
 - 3.5 Locate the design points.
 - 3.6 Size all range pipes in the installation using the pre-calculated tables.
 - 3.7 Size the distribution pipework up to the design point using the pre-calculated tables.
 - 3.8 Size the distribution pipework from the design point to

- the control valve using hydraulic calculations.
- 3.9 Prepare fabrication design sheets and material lists.
- 4 Finalise work.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
- 4.2 Apply workplace recording and reporting procedures where required.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3030A Design pre-calculated fire sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3030 Design fire sprinkler systems using pre-calculated charts and tables

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3030A Design pre-calculated fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing a fire sprinkler system using plans and specifications provided for an ordinary III hazard classification building, including:
 - at least 25 sprinkler heads and two branches
 - spacing and location of sprinkler heads
 - specifications for the size and layout of all pipework
 - layout drawings, fabrication sheets and materials lists.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- legal responsibilities of people related to designing fire sprinkler systems
- legislation, regulations, standards and codes relating to designing a fire sprinkler system
- general fire protection systems and design terminology and symbols
- structural systems, building materials and building services of buildings and structures that require fire sprinkler systems.
- characteristics, application and limitations of approved materials and components of fire sprinkler systems
- identifying and explaining the difference between deemed to satisfy installations and performance-based solutions
- functional and operational features of tools and equipment used to design fire sprinkler systems
- processes, procedures and techniques of:

- applying pre-calculated charts and tables in the design of fire sprinkler systems
- hydraulic calculations associated with pre-calculated design.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3031 Fabricate and install fire hydrant and hose reel systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1
- Supersedes and is equivalent to CPCPFS3031A Fabricate and install fire hydrant and hose reel systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to fabricate and install fire hydrant and hose reel systems on new or existing structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3023 Fabricate and install non-ferrous pressure piping

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and apply fire hydrant and hose reel requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, |

work health and safety (WHS) and environmental requirements.

- | | | | |
|---|-------------------------------------|-----|--|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select and check the serviceability of appropriate tools and equipment, including personal protective equipment (PPE). |
| 3 | Fabricate, install and test system. | 3.1 | Set out system to relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
| | | 3.2 | Connect fire brigade suction and booster arrangement. |
| | | 3.3 | Fit all pipework and pipe supports. |
| | | 3.4 | Connect fire hydrant valves, hose reels and ancillary equipment. |
| | | 3.5 | Perform hydrostatic test on installation. |
| | | 3.6 | Complete documentation according to relevant regulatory requirements. |
| 4 | Clean up. | 4.1 | Clear the work area and dispose of any materials in accordance with state and territory legislation and workplace procedures. |
| | | 4.2 | Clean, check for serviceability and store and secure plant, equipment and tools reporting any damage to designated personnel. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3031A Fabricate and install fire hydrant and hose reel systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3031 Fabricate and install fire hydrant and hose reel systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Supersedes and is equivalent to CPCPFS3031A Fabricate and install fire hydrant and hose reel systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and performing hydrostatic testing of a fire hydrant and a hose reel system to the relevant codes, Australian Standards, manufacturer's specifications and jurisdictional requirements from an existing branch in a water supply using approved materials that contains:
 - a fire brigade booster and suction arrangement
 - a fire hydrant landing valve
 - a fire hose reel in copper
 - a fire hose reel in galvanised mild steel.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- processes, procedures and techniques of:
 - fabricating and installing fire hydrant and hose reel systems
 - pressure testing systems
 - pipe thread sealing methods
 - pipe jointing, involving:
 - threading
 - roll grooving
 - silver soldering
 - compression unions
 - press fit and flanges
- characteristics, application and limitations of approved materials and components used in fire hydrant and hose reel systems, above and below ground

- functional and operational features of tools and equipment used to install fire hydrant and hose reel systems
- fire brigade suction and booster arrangements
- feed and attack hydrants
- backflow prevention associated with fire hydrant and hose reels
- statutory and regulatory authorities:
 - Commonwealth, state or territory governments, local authorities
 - Codes and Australian Standards for location and installation of fire hydrants and hose reels
- how to access relevant information, including job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used for the installation and testing fire hydrants and hose reel systems
- work health and safety (WHS) requirements for installing and testing fire hydrants and hose reel systems
- installation requirements for fire hydrants and hose reel systems, above and below ground.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3034 Install control valve assemblies, actuating devices and local alarms

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3034A Install control valve assemblies, actuating devices and local alarms. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install control valve assemblies, actuating devices and local alarms for fire protection systems in commercial, industrial and residential settings, including new or existing structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|-------------------------------------|-----|---|
| 1 | Identify installation requirements. | 1.1 | Obtain, read and apply control valve devices and alarm requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
|---|-------------------------------------|-----|---|

- 1.2 Identify and apply workplace policies and procedure, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check the serviceability of appropriate tools and equipment, including personal protective equipment (PPE).
 - 2.3 Prepare work area to support efficient installation.
- 3 Install and test system components.
 - 3.1 Set out and install pipe supports and fixings.
 - 3.2 Connect control valve assemblies, components, devices, alarms, piping and materials.
 - 3.3 Apply jointing systems.
 - 3.4 Pressure test installed system.
 - 3.5 Set and confirm operation of all components, including alarm generation.
 - 3.6 Complete documentation according to relevant regulatory requirements.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3034A Install control valve assemblies, actuating devices and local alarms.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3034 Install control valve assemblies, actuating devices and local alarms

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3034A Install control valve assemblies, actuating devices and local alarms. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and testing a:
 - wet control valve assembly with water motor alarm and automatic jacking pump
 - deluge control valve assembly
 - double interlock pre-action control valve assembly
 - combined riser control valve assembly including flow switch and solenoid test loop.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- relevant control valve assemblies, actuating devices and local alarms in fire sprinkler systems
- legislation, relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- processes, procedures and techniques of:
 - installing control valve, actuating and alarm components in sprinkler systems
 - pressure testing systems
 - pipe jointing including threading and roll grooving
- functions and operations of the following valves and their components:
 - wet alarm valves and systems
 - deluge alarm valves and systems
 - dry alarm valves and systems

- pre-action and double interlock pre-action alarm valves and systems
- solenoid test loops
- water motor alarms
- jacking pumps
- pressure switches
- flow switches
- pressure gauges
- butterfly valves
- OS&Y valves
- ball valves
- check valves
- strainers
- inspection tees
- how to access relevant information, including relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used for connecting control valve assemblies, actuating devices and local alarms
- work health and safety (WHS) requirements for connecting control valve assemblies, actuating devices and local alarms
- installation requirements for connecting control valve assemblies, actuating devices and alarms.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3036 Install special hazard systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Elements and Performance Criteria 2.3.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3036A Install special hazard systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install special hazard extinguishing systems, including decommissioning gaseous agent containers and actuation devices.

All technicians performing work described in this unit that involves the handling of prescribed ozone depleting substances (ODS) and synthetic greenhouse gases (SGG) extinguishing agents must hold an appropriate extinguishing agent handling licence (EAHL).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Obtain, read and apply special hazard systems requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
|---------------------------------------|--|

- 1.2 Identify and apply workplace policies and procedures, organisational work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect components.
 - 2.2 Select and check the serviceability of appropriate tools and equipment including personal protective equipment (PPE).
 - 2.3 Prepare work area to support efficient installation of special hazard extinguishing systems.
- 3 Decommission gaseous agent containers and actuation devices.
 - 3.1 Confirm and isolate all interface systems and put in place appropriate signage, lock-off and documentation.
 - 3.2 Physically disconnect manual, electrical and mechanical actuation devices.
 - 3.3 Identify and disconnect pneumatic actuation devices and pilot and slave tubes and fittings.
 - 3.4 Connect transport caps on all outlets, plugs and locking devices, according to manufacturer's specifications.
 - 3.5 Disconnect container bank manifold connection components.
 - 3.6 Install transport caps on valve outlets.
 - 3.7 Organise removal and transportation of gaseous agent containers to storage or reclaim facility.
 - 3.8 Complete documentation and decommissioning sign-off requirements and confirm with relevant persons.
- 4 Install and test special hazard systems.
 - 4.1 Set out system and install fixings.
 - 4.2 Check pipe supports and install pipes, fittings, nozzles and components.
 - 4.3 Perform piping system pressure testing.
 - 4.4 Connect cylinder manifold and cylinder hoses.

- 4.5 Connect cylinder supports and cylinders and secure in brackets.
 - 4.6 Remove transport caps and connect cylinder hoses.
 - 4.7 Connect actuators.
 - 4.8 Complete documentation according to relevant regulatory requirements.
- 5 Clean up.
- 5.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 5.2 Clean tools and equipment, check for serviceability, and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3036A Install special hazard systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3036 Install special hazard systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Elements and Performance Criteria 2.3.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3036A Install special hazard systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing a special hazards fire suppression system (not prescribed ozone depleting substances (ODS) or synthetic greenhouse gases (SGG) extinguishing agent), incorporating a storage cylinder connected by piping to a simple distribution system incorporating two nozzles and one actuating device
- complying with ODS or SGG legislation, codes and regulations
- decommissioning a gaseous system comprising of at least three cylinders and prepare the cylinders for transport
- correctly selecting and using tools and equipment used for installation of gaseous agent containers and actuation devices.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- ODS and SGG legislative and industry requirements for special hazard fire suppression systems installation activities
- characteristics, application and limitations of approved materials and components used in special hazardous systems actuating devices:
 - prescribed ODS and SGG materials
 - extinguishing agents, including or other approved materials
 - pipes
 - sprinkler and delivery systems
- hazard categories, classes of fire hazard and extinguishing agents
 - workplace and safety including dangerous goods

- transportation of dangerous goods
- processes, procedures and techniques of:
 - installing and testing special hazard systems
 - pressure test systems
 - cylinder anchorage
 - purging
- relevant statutory and authorities' requirements related to installing special hazard systems:
 - requirements for room ventilation and integrity
 - structural systems, building materials and building services
- functional and operational features of tools and equipment used to install special hazard systems:
 - cutting and threading equipment
 - roll grooving equipment
 - hand and power tools
 - ladders
 - testing equipment
- types of special hazard extinguishing systems:
 - carbon dioxide - high and low pressure
 - naturally occurring blended gasses (Proinert, Argonite, Inergen)
 - chemical reaction and explosion suppression systems
 - dry chemical
 - foam
 - prescribed ODS and SGG extinguishing agents
 - deluge
 - water mist
- types of operation of actuation devices (also known as actuators):
 - electrical
 - manual
 - mechanical
 - pneumatic
- special hazard system components, including:
 - directional valves
 - lock off valves
 - pyrotech actuators
 - nozzles
 - manifolds
 - hoses
 - cylinders
 - cylinder manifold brackets

- pressure relief vents
- dirt traps
- bracketing and pipe supports
- foam generators
- foam monitors
- foam proportioning equipment
- foam indicators
- aspirating foam nozzles
- foam storage vessels, including bladder tanks
- relevant documentation required when installing special hazard systems
- how to access relevant information, including relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements for installation of special hazard systems
- tools, materials and equipment used for installation of special hazard systems
- work health and safety (WHS) requirements for installation of special hazard systems
- installation requirements for installation of special hazard systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3037 Install residential life safety sprinkler systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3037A Install domestic and residential life safety sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install residential life safety fire sprinkler systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify installation requirements.	1.1 Obtain, read and apply residential sprinkler systems requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
2 Prepare for work.	2.1 Create a materials list and collect materials.

- 2.2 Select and check the serviceability of appropriate tools and equipment including personal protective equipment (PPE).
 - 2.3 Prepare work area.
- 3 Install and test system components.
 - 3.1 Set out system and apply fixings.
 - 3.2 Connect assemblies, devices, alarms, piping and materials.
 - 3.3 Apply jointing systems to components
 - 3.4 Install relevant fire sprinkler heads according to plans and specifications.
 - 3.5 Undertake a hydrostatic pressure-test to ensure integrity of pipework.
 - 3.6 Record test data in required format.
 - 3.7 Complete documentation according to relevant regulatory requirements.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability, report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3037A Install domestic and residential life safety sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3037 Install residential life safety sprinkler systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3037A Install domestic and residential life safety sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- given the floor plan of a residential building of at least five (5) rooms correctly locating the sprinkler heads according to relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- installing and testing a residential life safety sprinkler system in Class 2 and 3 buildings not more than 25 metres in effective height with a rise in storeys of 4 or more, using plans and specifications, incorporating fit off to:
 - one sprinkler head in steel pipe
 - one sprinkler head in chlorinated polyvinyl chloride (CPVC) piping
 - one sprinkler head in copper pipe
- These must include:
 - water supply
 - piping and pipe supports
 - control valves assembly
 - actuating devices
 - alarms
 - three sprinkler heads
 - remote test point.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- legislation, regulations, codes and standards relating to installing fire sprinkler system
- workplace and safety requirements
- sustainability concepts and principles and environmental requirements relating to water and resource usage

- processes, procedure and techniques of:
 - installation and testing of residential fire sprinkler systems
 - applying fire ratings
 - hydraulic testing
 - pipe jointing including hems, Teflon tape and CPVC solvent
 - roll grooving
 - brazing
 - press fits (copper)
- functional and operational features of tools and equipment used to install life safety fire sprinkler systems
- structural systems, building materials and building services of buildings and structures that require life safety fire sprinkler systems
- operation and function of the following components:
 - residential sprinkler heads
 - flow switches
 - check valves
 - remote test points
 - concealed space sprinkler heads
 - waste, test and drain valves
 - pipe supports
- characteristics, application and limitations of materials, including:
 - steel and CPVC pipe used in residential sprinkler systems
 - manufacturers' specifications and their purpose in fire sprinkler system installation
 - how to access relevant information, including job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
 - tools, materials and equipment used for installing residential life safety sprinkler systems
 - work health and safety (WHS) requirements for installing residential life safety sprinkler systems
 - installation requirements for residential life safety sprinkler systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3038 Test and maintain fire hydrant and hose reel installations

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- PC2.1 Identify and calculate materials required to complete the task.
 - PC2.2 Identify potential hazards and determine and implement control measures and personal protective equipment (PPE) requirements.
 - PC2.3 Determine job priorities and sequence job tasks in consultation with others on site.
- The PCs have been repositioned to be consistent with the related CPCPFS sector units of competency.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3038A Test and maintain fire hydrant and hose reel installations. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to conduct routine service, maintain and repair fire hydrant and hose reel installations, in accordance with AS 1851 Routine inspection of fire protection systems and equipment. It excludes fire pump performance and booster connection flow testing. It applies to people who work on new or existing structures in commercial and residential settings.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Plan the work. | 1.1 Access, read and apply fire hydrant and hose reel requirements relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply organisational work health and safety (WHS), including sign in, environmental requirements. |
| 2 Prepare for work. | 2.1 Identify and calculate materials required to complete the task. |
| | 2.2 Identify potential hazards and determine and implement control measures and personal protective equipment (PPE) requirements. |
| | 2.3 Determine job priorities and sequence job tasks in consultation with others on site. |
| | 2.4 Select and check serviceability of appropriate tools, equipment and PPE. |
| | 2.5 Receive and check materials against the docket and order form for correct product, compliance with standards and acceptable condition and action discrepancies. |
| | 2.6 Apply AS 1851 Routine service of fire protection systems and equipment (Section 1) and routine service requirements for fire hydrant and hose reel installation. |
| | 2.7 Confirm correct location of fire protection systems and equipment in accordance with AS 2419 Fire hydrant installations system design, installation and commissioning. |
| 3 Test, repair and | 3.1 Isolate system interfaces. |

- replace faulty components and perform systems checks.
- 3.2 Carry out routine service up to five yearly frequency and maintenance tasks as detailed in AS 1851 Routine service of fire protection systems and equipment.
 - 3.3 Identify faulty items or components and choose appropriate service procedure.
 - 3.4 Remove faulty items or components, using appropriate tools and equipment and rectify.
 - 3.5 Complete documentation according to workplace procedures and submit within specified timeframes.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3038A Test and maintain fire hydrant and hose reel installations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3038 Test and maintain fire hydrant and hose reel installations

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

- PC2.1 Identify and calculate materials required to complete the task.
- PC2.2 Identify potential hazards and determine and implement control measures and personal protective equipment (PPE) requirements.
- PC2.3 Determine job priorities and sequence job tasks in consultation with others on site.

The PCs have been repositioned to be consistent with the related CPCPFS sector units of competency.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS3038A Test and maintain fire hydrant and hose reel installations. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- conducting routine testing and maintenance up to five yearly frequency, excluding fire pump performance and booster connection flow testing on two different fire hydrants and hose reel installations
- diagnosing a critical defect and non-conformance and:
 - report as per AS 1851 Routine service of fire protection systems and equipment requirement
 - repair each defect and non-conformance
 - conduct testing to ensure rectification is effective
 - reinstate installations and complete a service report
- replacing all serviceable components as per preventative maintenance requirements of AS 1851 Routine service of fire protection systems and equipment on:
 - three hydrant valves

- two hose reels
- replacing one faulty hose reel drum
- setting a pressure reducing valve according to relevant specifications
- performing system interfaces isolation of fire detection control and indicating equipment (FDCIE) and fire pumpsets
- confirming correct location of hydrants, attack and feed hydrant and hose reels in accordance with AS 2419 Fire hydrant installations system design, installation and commissioning from a site or plan of 2000 square metres.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- responsibilities relating to quality requirements for testing and maintaining fire hydrants and hose reel installations:
 - documentation and information systems and processes
 - policies and guidelines relating to work roles and responsibilities
 - workplace reporting
- operational knowledge of hydrant and hose reel systems
- purpose, function and maintenance requirements of the following components in hydrant and hose reel systems:
 - hydrant valves
 - hose reels
 - check valves
 - booster assemblies
 - gate valves
 - gauges
 - pipework
 - hydrant cabinets
 - booster cabinets
 - hose reel cabinets
 - hydrant and hose reel signage
 - isolation valves
 - pipe supports
 - anti-tamper switches
 - pump start initiating devices
 - block plans
- processes, procedures and techniques of:
 - testing and maintaining fire hydrant and hose reel installations
 - system interfaces with hydrants and hose reels
 - water flow testing of hydrants and hose reels

- how to access relevant information, including job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements to test and maintain fire hydrant and hose reel installations
- tools, materials and equipment used to test and maintain fire hydrant and hose reel installations
- work health and safety (WHS) requirements for performing tests and conducting fire hydrant and hose reel installations.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3040 Conduct basic functional testing of water-based fire-suppression systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 1.1, 2.1, 3.5 and 3.8.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3040A Conduct basic functional testing of water-based fire suppression systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to complete monthly and six-monthly routine service procedures on water-based fire suppression systems according to AS 1851 Routine service of fire protection systems and equipment in new or existing residential or commercial structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Plan and apply compliance requirements to | 1.1 Determine current legislative and industry requirements against organisational service operations and adjust as required to ensure compliance. |
|---|--|

- service operations.
 - 1.2 Interpret and follow the requirements of section one of AS 1851 Routine service of fire protection systems and equipment.
 - 1.3 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.4 Prepare for functional testing of water-based fire-suppression systems according to identified requirements.

- 2 Conduct monthly and six-monthly routine service inspections and record results.
 - 2.1 Notify appropriate site contact of entry and follow site procedures for notifying occupants and/or staff of planned fire sprinkler system test.
 - 2.2 Apply appropriate workplace procedures and risk control measures when inspecting water-based fire-suppression systems.
 - 2.3 Identify plant and other system interfaces that must be isolated to allow for inspection activities.
 - 2.4 Identify key control valves and determine their functions with reference to manufacturer instructions to allow for routine inspection activities.
 - 2.5 Perform and record visual inspections and results according to AS 1851 Routine service of fire protection systems and equipment.

- 3 Conduct monthly and six-monthly testing and record results.
 - 3.1 Implement test methods for monthly and six-monthly testing.
 - 3.2 Perform routine testing procedures according to the required frequency schedule determined by AS 1851 Routine service of fire protection systems and equipment to verify the system functions as intended.
 - 3.3 Compare test results with manufacturer, legislative and industry requirements.
 - 3.4 Document results in accordance with AS 1851 Routine service of fire protection systems and equipment.

- 3.5 Identify, record and report any defects or non-conformances in accordance with AS 1851 Routine service of fire protection systems and equipment.
 - 3.6 Prepare and forward reports to relevant persons for action.
 - 3.7 Reinstate system according to organisational and manufacturer requirements.
 - 3.8 Notify site contact of completion of test and follow site procedures for notifying occupants and staff.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure according to workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3040A Conduct basic functional testing of water-based fire suppression systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3040 Conduct basic functional testing of water-based fire-suppression systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Elements and Performance Criteria 1.1, 2.1, 3.5 and 3.8.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3040A Conduct basic functional testing of water-based fire suppression systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit and must:

- conduct inspections and perform routine services for three scheduled monthly activities and two scheduled six-monthly activities on:
 - two different wet systems
 - two different pre-action systems
 - two different deluge systems
- perform six monthly tests to include:
 - main drain test and floor zone flow switch test, one manually operated and one solenoid operated on wet set
 - two different pre-action systems, including full trip test
- include all of the following water-based fire-suppression systems:
 - deluge
 - wet or general system
 - residential system
 - combined sprinkler and hydrant system
 - double interlock pre-action
- ensure all systems are interfaced to a fire indicator panel (FIP) and connected to alarm signalling equipment
- comply with all relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
- complete reports and work according to customer and organisational expectations within accepted timeframes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- the basic principles of operation and purpose of components of water-based fire suppression systems:
 - accelerators and exhausters
 - alarm ‘dry’ (i.e. deluge) control valve assembly components
 - alarm ‘wet’ control valve assembly components
 - batteries
 - circulation and system pressure relief valves
 - isolation and control valves
 - pressure and flow switches
 - pressure gauges
 - pump controllers and ancillary equipment for control and indication
 - pumpsets
 - retard chambers
 - solenoid valves
 - sprinkler heads
 - system block plans
 - system pressure gauge schedules
 - water motor alarm gong
 - water supply tanks: atmospheric and suction with priming tanks
- the general operation of water-based systems
- the general operation of a gauge
- the key features of legislation, regulations and codes applicable to inspecting and testing water-based fire-suppression systems
- metric and imperial pressure gauge readings
- systems and components of water-based fire-suppression systems:
 - air compressors fitted to systems
 - circulation and system pressure relief valves
- controls on the pumpset controller panel:
 - fuel gauges
 - indicators
 - main isolating switch
 - flow switches and associated testing equipment
 - isolating valves associated with water-based fire-suppression system
 - main water supply underground key-operated valve location
 - pressure gauges
 - pumpsets associated with water-based fire-suppression system

- pump starting switches
- suction inlet strainers or screen on a static water supply for the water-based fire-suppression system
- system block plan requirements for design details of systems installed since 1972
- system main alarm bell and/or alarm strobe indicating building entry point for emergency personnel
- system pressure gauge schedules, where required
- system pressure maintenance or jacking pumps
- water-based fire-suppression system control and alarm valves and ancillary equipment for control and alarm operation indication/interface
- water supply tanks, water level indicators and automatic inflow valves
- key control valves which may include those specified in AS 2118 Automatic fire sprinkler systems installed in:
 - associated control valve trim
 - activation small bore pipework to the alarm and control valve assembly
- terminology used in relation to water-based fire-suppression systems
- types of water supply tanks:
 - atmospheric
 - suction with priming
- applications of water-based systems
- water-based fire-suppression systems:
 - alternate wet or dry systems
 - combined sprinkler or hydrant systems
 - deluge systems
 - dry systems
 - pre-action and double interlock pre-action systems
 - residential and domestic systems
 - tail-end systems
 - wet and general systems
- legislative and industry requirements:
 - dangerous goods regulations
 - licensing arrangements
 - environmental regulations
 - work health and safety (WHS) legislation, regulations and codes
 - relevant Commonwealth and state or territory building acts, regulations and codes, such as National Construction Code (NCC)
 - AS 1851 Routine service of fire protection systems and equipment
- other relevant legislation relating to fire suppression equipment
- organisational requirements:
 - client-specific contractual requirements
 - documentation and information systems and processes

- legal and organisational policies and guidelines, including personnel practices and guidelines outlining work roles, responsibilities and delegations
- use of electronic job scheduling and communication devices
- system interfaces:
 - flow switches
 - pressure switches
 - tamper switches
 - valve positioning switches
 - control and indicating equipment (CIE)
 - plant shutdowns
- devices that operate signals between the water-based fire-suppression system and other services:
 - building heating, ventilation and air conditioning (HVAC) services
 - fire brigade monitoring providers
 - CIE
- other life safety systems:
 - warning systems
 - fire indicator panel (FIP)
- methods to apply sustainability principles and concepts
- testing procedures for:
 - checking desiccant condition (air dryer or crystals, water separator bowl) and cleaning or replacing as required
 - checking oil level and visually assessing condition of oil on air compressor
- routine service frequency schedules including reference to AS 1851 Routine service of fire protection systems and equipment schedules of work conducted at regular frequencies that relate to the work scope for weekly, monthly, and six-monthly inspection and testing schedules
- how to access relevant information, including codes and standards
- tools, materials and equipment used for testing and maintaining water-based fire-suppression systems
- WHS requirements for testing and maintaining water-based fire-suppression systems
- installation requirements for water-based fire-suppression systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3041 Inspect and test fire pumpsets

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 2.1, 2.3 and 3.8.
Performance Evidence is formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3041A Inspect and test fire pumpsets. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to complete monthly and six-monthly routine service procedures according to AS 1851 Routine service of fire protection systems and equipment in new or existing, residential or commercial buildings to verify that fire pumpsets function as intended.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Plan and apply compliance requirements to service operations. | 1.1 Identify and confirm current legislative and industry requirements against organisational service operations and adjust as required to ensure compliance. |
| | 1.2 Interpret and follow the requirements of section 1 of AS |

- 1851 Routine service of fire protection systems and equipment.
- 1.3 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements and sustainability principles.
 - 1.4 Confirm schedule and entry to premises at arranged time with appropriate personnel and site contact.
 - 1.5 Check location and equipment for compliance with legislative and industry requirements and take action according to organisational requirements to ensure compliance.
 - 1.6 Prepare for functional inspection and testing according to identified requirements.
- 2 Conduct monthly and six-monthly inspections and record results.
- 2.1 Notify appropriate site contact of entry and follow site procedures for notifying occupants and/or staff of planned fire sprinkler system test.
 - 2.2 Apply appropriate workplace procedures and risk control measures when inspecting fire pumpsets.
 - 2.3 Use manufacturers' instructions to identify functions of fire pumpset controls and conduct inspections and tests.
 - 2.4 Isolate or disable plant and other system interfaces.
 - 2.5 Perform visual inspections according to AS 1851 Routine service of fire protection systems and equipment.
 - 2.6 Record fire pumpset inspection results according to AS 1851 Routine service of fire protection systems and equipment.
- 3 Conduct monthly and six-monthly tests and record results.
- 3.1 Implement test methods for monthly and six-monthly testing.
 - 3.2 Perform routine test procedures according to the required frequency schedule to verify that the system functions as intended.
 - 3.3 Compare test results with manufacturer, legislative and

- industry requirements.
- 3.4 Document results according to AS 1851 Routine service of fire protection systems and equipment.
 - 3.5 Identify, record and report any defects or non-conformances in accordance with AS 1851 Routine service of fire protection systems and equipment.
 - 3.6 Complete and forward report to relevant persons for action.
 - 3.7 Reinstate system and system interfaces according to organisational requirements.
 - 3.8 Notify site contact of completion of test and follow site procedures for notifying occupants and/or staff.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3041A Inspect and test fire pumpsets.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3041 Inspect and test fire pumpsets

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Elements and Performance Criteria 2.1, 2.3 and 3.8.
Performance Evidence is formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3041A Inspect and test fire pumpsets. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit a candidate must meet the performance criteria for this unit by:

- conducting four routine services on a fire pumpset, including:
 - three scheduled monthly, and
 - one scheduled six-monthly activities

and include:

- compression ignition pumpsets used as a booster pumpset on a sprinkler/hydrant system
- an electrical pumpset used as a:
 - booster pumpset on a sprinkler/hydrant system fed from a town mains supply or a static water supply
- conducting all routine service in compliance with current Australian standards, regulations, codes and organisational requirements
- completing work according to customer and organisational expectations within accepted timeframes.
- .

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- application of fire pumpsets as defined in AS 2941 Fixed fire protection installations – Pumpset systems and AS 2118 Automatic fire sprinkler systems
- terminology used in relation to pumpsets
- basic principles of hydraulics:

- basic head or pressure calculation for height per metre
- metric and imperial pressure scales
- basic principles of operation and purpose of components:
 - accumulators
 - batteries
 - circulation and system pressure relief valves
 - compression ignition pumpset drivers
 - electrical pumpset drivers
 - engine starting and control or monitor batteries
 - header tanks
 - impellers
 - isolating valves associated with pumpsets
 - jacking or jockey pumps
 - multi-stage pumps
 - pressure gauges
 - pump controllers and ancillary equipment for control and indications
 - pump drivers
 - pump glands and seals
 - pump performance curves
 - pump starting devices
 - pumpset couplings
 - safety guards
 - system pressure gauge schedules
- water supply tanks:
 - atmospheric
 - suction with priming tanks
- general operation of pumpsets:
 - cooling systems
 - design speed requirements
 - exhaust systems
 - fuel systems
 - full load operation
 - normal running operation
 - pre-start and post-start checks
 - pumpset controllers
 - starting and stopping methods
 - suction and discharge connections and pressure readings
- pumpset types which may include those used in fire protection systems that comply with Australian standards such as:
 - AS 1851 Routine service of fire protection systems and equipment

- AS 2118 Automatic fire sprinkler systems
- AS 2419 Fire hydrant installations
- AS 2941 Fixed fire protection installations - Pumpset systems
- AS CA16-1962 Automatic sprinkler installations
- NFPA 20 Standard for the installation of stationary fire pumps for fire protection (US)
- system interfaces:
 - flow switches
 - pressure switches
 - tamper switches
 - valve positioning switches
 - control and indicating equipment (CIE)
- devices that operate signals between pumpset and other services such as building monitoring services
- other life safety systems:
 - warning systems
 - fire indicator panel (FIP)
 - security monitoring services
- legislative and industry requirements:
 - dangerous goods regulations
 - licensing arrangements
 - environmental regulations
 - work health and safety (WHS) legislation, regulations and codes associated with fire pump rooms such as: working in isolation, lighting, fumes, trip hazards
 - relevant Commonwealth and state or territory building acts, regulations and codes, such as National Construction Code (NCC)
 - AS 1851 Routine service of fire protection systems and equipment
- organisational requirements:
 - client-specific contractual requirements
 - documentation and information systems and processes
 - legal and organisational policies and guidelines, including personnel practices and guidelines outlining work roles, responsibilities and delegations
 - use of electronic job scheduling and communication devices
- documentation to review and verify that installed systems comply with legislative and industry requirements such as:
 - building's essential services or fire safety measures listing
 - relevant commonwealth and state or territory building acts, regulations and codes
 - relevant Australian standards listed on essential service listing
 - environmental regulations
- methods of applying sustainability principles and concepts
- testing procedures and activities that comply with requirements of AS 1851 Routine service of fire protection systems and equipment to verify the following pump functions:

- pump starts at correct pressure
- pump supplies correct kPa at no flow condition requirements
- routine service frequency schedules:
 - reference to AS 1851 Routine service of fire protection systems and equipment schedules of work conducted at regular frequencies that relate to the work scope for monthly and six-monthly routine service schedules
- how to access relevant information, including codes and standards
- tools, materials and equipment used for inspecting and testing test fire pumpsets
- WHS requirements for inspecting and testing test fire pumpsets.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3042 Conduct annual routine service of complex water-based fire-suppression systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 1.3, 2.1, and 2.2.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3042A Conduct annual functional testing of complex water-based fire-suppression systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to conduct annual routine service procedures to verify that complex water-based fire-suppression system equipment functions as designed for a Class 2-9 building greater than 5000 square metres.

It includes isolating systems to visually inspect and identify non-compliance defects and resetting systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------|---|
| 1 Plan the work. | 1.1 Determine and apply annual routine service operations requirements from AS 1851 Routine service of fire |
|------------------|---|

- protection systems and equipment (section 1) and appropriate legislative and industry codes.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Arrange and confirm appropriate time for conducting the annual routine service with the site contact.
 - 1.4 Select and check tools, equipment and personal protective equipment (PPE) for serviceability and report any faults.
- 2 Conduct inspections and record results.
- 2.1 Confirm attendance on site with site contact and follow workplace and organisational procedures for signing in.
 - 2.2 Follow site procedures for notifying occupants and/or staff of annual routine service.
 - 2.3 Isolate control and indicating equipment (CIE), system interfaces and other plant according to site requirements.
 - 2.4 Apply appropriate workplace procedures and risk control measures when inspecting water-based fire-suppression systems.
 - 2.5 Identify key control valves and determine their functions regarding installation drawings to conduct routine inspection and tests.
 - 2.6 Identify all defects and non-conformances and report according to AS 1851 Routine service of fire protection systems and equipment requirements.
 - 2.7 Perform and record visual inspections on complex components.
 - 2.8 Perform visual installation and design survey inspections.
 - 2.9 Prepare installation and design survey report.
- 3 Conduct full function test on water-based components only.
- 3.1 Confirm appropriate time to conduct full function test with client and discuss the process and shutdowns likely to occur during test.

- 3.2 Confirm coordination of other trades and technicians required to conduct full function test.
 - 3.3 Determine from system interface diagram the interfaced system required to operate.
 - 3.4 Isolate alarm signalling equipment.
 - 3.5 Perform annual testing according to AS 1851 Routine service of fire protection systems and equipment requirements.
 - 3.6 Conduct test and confirm operation of all required water-based fire protection system according to the system interface diagram.
 - 3.7 Reinstate systems.
 - 3.8 Identify and document all defects and non-conformances and report according to AS 1851 Routine service of fire protection systems and equipment requirements.
 - 3.9 Prepare and forward to persons for action.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure according to workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3042A Conduct annual functional testing of complex water-based fire-suppression systems.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3042 Conduct annual routine service of complex water-based fire-suppression systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 1.3, 2.1, and 2.2.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3042A Conduct annual functional testing of complex water-based fire-suppression systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- conducting relevant an annual routine service (other than water flow testing) on water-based fire suppression systems with complex components for all the following systems:
 - a general sprinkler system with pumpset system
 - a combined sprinkler and hydrant systems
 - a deluge system
 - a pre-action system
 - a pressure reducing valve
 - a pressure relief valve
- performing two installation and design surveys, one physical and one desktop survey (e.g. plans, specifications, photographic evidence, case studies) on a Class 2-9 building greater than 5000 square metres to produce an inspection report on the following elements:
 - pipework external condition
 - sprinkler head condition
 - sprinkler head obstructions
 - sprinkler head location and spacing
 - sprinkler head compatibility and ambient conditions (response time index (RTI) and sprinkler head and spray pattern)
 - external sprinkler requirements
 - design standard suitable for current building occupation requirements, such as classification and storage height.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- definitions of basic principles of operation and purpose of components of complex water-based fire protection systems
- general operation of a gauge
- general operation of complex water-based fire-suppression systems
- metric and imperial pressure gauge readings
- system components:
 - air compressors fitted to systems
 - circulation and system pressure relief valves
 - flow switches and associated testing equipment
 - isolating valves associated with water-based fire-suppression system
 - pressure gauges
 - pressure reducing equipment
 - pumpsets associated with water-based fire-suppression system
 - pump starting switches
 - purpose and key requirements of system block plan for installations installed since 1972
 - suction inlet strainers and screens on a static water supply for water-based fire-suppression system
 - system main alarm bell and/or alarm strobe indicating building entry point for emergency personnel
 - system pressure gauge schedules, where required
 - water-based fire-suppression system control and alarm valves and ancillary equipment for control and alarm operation indication/interface
 - water supply tanks, water level indicators and automatic inflow valves
 - water supply underground key-operated valve location
- controls on the pumpset controller panel:
 - fuel gauges
 - indicators
 - main isolating switch
- terminology used in relation to water-based fire-suppression systems
- water-based fire-suppression system applications as defined in AS 2118 Automatic fire sprinkler systems or AS 2419 Fire hydrant installations \-- System design, installation and commissioning
- legislative and industry requirements:
 - dangerous goods regulations
 - licensing arrangements
 - environmental regulations
 - work health and safety (WHS) legislation, regulations and codes

- relevant Commonwealth and state or territory building acts, regulations and codes, such as National Construction Code (NCC)
- AS 1851 Routine service of fire protection systems and equipment
- organisational requirements, including:
 - client-specific contractual requirements
 - documentation and information systems and processes
 - legal and organisational policies and guidelines, including personnel practices and guidelines outlining work roles, responsibilities and delegations
 - use of electronic job scheduling and communication devices
- system interfaces, including:
 - flow switches
 - pressure switches
 - tamper switches
 - valve positioning switches
- devices that operate signals between the water-based fire-suppression system and other services such as:
 - building heating, ventilation and air conditioning (HVAC) services
 - fire brigade monitoring providers
- other life safety systems, including:
 - warning systems
 - fire indicator panel (FIP)
- applying inspections, tests and survey requirements to equipment and systems, according to relevant Australian standards, to determine that they are:
 - capable of operating as intended when originally installed
 - still suitable for the fire hazard or risk being protected, as no change in occupancy or use of the area protected has occurred since the equipment or system was installed or last modified
 - providing the coverage and protection needed to meet original design and performance requirements
- reviewing documentation to verify that installed systems comply with legislative and industry requirements such as:
 - building's essential services or fire safety measures listing
- annual routine service, inspection, testing and surveying as referred to in AS 1851 Routine service of fire protection systems and equipment, including:
 - annual frequency inspection, testing and surveying activities, except water flow proving testing
 - operating pressure reducing valves to verify operation is at required pressures
 - operating pressure relief valves to verify operation is at required pressures
 - operating accelerator/exhauster and double interlock valves to verify operation is at required pressures and delivery time on dry pipe or pre-action systems
- complex components of a water-based fire-suppression systems, including:
 - double interlock systems

- pressure reducing systems
- accelerator/exhauster systems
- key control valves which may include those specified in AS 2118 Automatic fire sprinkler systems installed in:
 - associated control valve trim
 - activation small bore pipework to the alarm and control valve assembly
- water-based fire-suppression systems, including:
 - alternate wet or dry systems
 - combined sprinkler or hydrant systems
 - deluge systems
 - dry systems
 - pre-action or recycle systems
 - residential and domestic systems
 - tail-end systems
- installation and design survey information which may include the annual survey required by AS 1851 Routine service of fire protection systems and equipment, to determine that water-based fire-suppression systems design and installation are not impaired by changes to:
 - building structure
 - occupant use
 - environment
- installation and design surveys conducted from floor level to identify design standard suitable for current building occupation requirements:
 - building classification
 - storage heights
 - external sprinkler requirements
 - pipework corrosion or damage
- installation and design surveys conducted from floor level to identify design standard suitable for current building occupation:
 - sprinkler head requirements
 - compatibility and ambient conditions
 - head condition
 - head location and spacing
 - head obstructions
 - spray pattern
 - temperature rating and RTI
- methods of applying sustainability principles and concepts
- testing procedures for:
 - checking desiccant condition (air dryer or crystals, water separator bowl) and cleaning or replacing as required
 - checking oil level and visually assessing condition of oil on air compressor

- routine service frequency schedules:
 - reference to AS 1851 Routine service of fire protection systems and equipment schedules of work conducted at regular frequencies that relate to the work scope for weekly, monthly, and six-monthly inspection and testing activities
- how to access relevant information, including codes and standards
- tools, materials and equipment used for conducting routine services of complex water-based fire-suppression systems
- WHS requirements for conducting routine services of complex water-based fire-suppression systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3043 Conduct functional water flow testing

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.6.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3043A Conduct functional water flow testing. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to complete functional water flow proving and load tests on water-based fire-suppression systems.

It includes identifying compliance requirements, isolating relevant plant and system interfaces, conducting functional water flow testing, resetting the system and completing mandatory reporting requirements.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------|---|
| 1 Plan the work. | 1.1 Identify, confirm and apply water flow testing requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
|------------------|---|

- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Check location and equipment against legislative and industry requirements and take action according to organisational requirements to ensure compliance.
 - 1.4 Select and check serviceability of tools, equipment and personal protective equipment (PPE).
 - 1.5 Identify and isolate relevant plant and system interfaces.
 - 1.6 Confirm that wastewater from flow test will not cause any damage or issues to site or surrounding area.
 - 1.7 Identify appropriate test points and required water flow test equipment.
 - 1.8 Locate and identify types of water supply isolating valves.
- 2 Prepare for work.
- 2.1 Apply appropriate workplace procedures and risk control measures.
 - 2.2 Depressurise flow test point pipework.
 - 2.3 Attach water flow test equipment according to manufacturer instructions and organisational requirements.
 - 2.4 Install gauges of known accuracy.
 - 2.5 Determine system water pressure and flow requirements from block plan.
 - 2.6 Select and chart at least four points to take readings when flow testing according to manufacturer's charts for the flow test equipment.
 - 2.7 Operate valves to isolate water supplies.
 - 2.8 Document all information from site block plan.
- 3 Conduct functional water flow proving
- 3.1 Perform tests on each water supply to verify that systems function as intended, stopping at a minimum of four

- and load test, and record results.
- points and recording installation, town's main and/or pump suction and discharge pressures.
- 3.2 Record pump driver RPM at the drive shaft, temperature of driver and oil pressure.
 - 3.3 Monitor cooling system closely while conducting flow test.
 - 3.4 Record temperature of pump room when conducting test.
 - 3.5 Compare test results with legislative and industry requirements.
 - 3.6 Identify all defects and nonconformances and report according to AS 1851 Routine service of fire protection systems and equipment.
 - 3.7 Document and graph results and forward report to relevant persons for action.
 - 3.8 Reinstate system according to organisational requirements.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure according to workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3043A Conduct functional water flow testing.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3043 Conduct functional water flow testing

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.6.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3043A Conduct functional water flow testing. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- conducting a load test on a wet and general electrical pumpset according to AS 1851 Routine service of fire protection systems and equipment
- conducting a load test on a wet and general diesel pumpset according to AS 1851 Routine service of fire protection systems and equipment
- conducting a functional water-flow test on a hydrant system incorporating a pumpset
- conducting two functional water-flow tests on a hydrant system:
 - one with a portable flow meter
 - one connected by a length of fire hose.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- basic principles of hydraulics
- basic principles of operation and purpose of components of a water-based fire protection system:
 - deluge control valve assembly components
 - alarm wet control valve assembly components
 - booster valve assembly
 - circulation and system pressure relief valves
 - compression ignition engine governing controls
 - differential pressure gauges
 - hand tachometers

- hydrant landing valve assembly
- isolation and control valves
- manometers
- orifice plates
- pitot tube water flow test instrument
- pressure and flow switches
- pressure gauges
- pump controllers and ancillary equipment for control and indication
- pumpsets
- solenoid valves
- system block plans
- system pressure gauge schedules
- throttling valves
- ultrasonic flow measuring equipment
- ultrasonic thickness gauges
- venturi devices
- water supply tanks (atmospheric, pressure and suction with priming tanks)
- general operation of a pumpset:
 - compression ignition engine governing control devices
 - cooling systems
 - design speed requirements
 - exhaust systems
 - fuel systems
 - full load operation
 - normal running operation
 - pre-start and post-start checks
 - pumpset performance curve
 - pumpset controllers
 - starting and stopping methods
 - suction and discharge connections and pressures readings
- general operation of water-based fire-suppression systems
- terminology used in relation to water-based fire-suppression systems
- water-based fire-suppression system components:
 - air compressors fitted to control valves
 - circulation and system pressure relief valves
 - electric motor specification plate
 - flow switches and associated testing equipment
 - isolating valves associated with water-based fire-suppression system
 - mains water supply underground key-operated valve location

- most hydraulically disadvantaged testing point on a system hose reel and hydrant system
- pressure gauges
- pumpsets associated with water-based fire-suppression systems
- pump starting switches
- suction inlet strainers or screen on a static water supply for water-based fire-suppression system
- system block plans
- system main alarm bell or alarm strobe indicating building entry point for emergency personnel
- system pressure gauge schedules
- water supply tanks, water level indicators and automatic inflow valves
- water-based fire-suppression system control and alarm valves and ancillary equipment for control and alarm operation indication or interface
- controls on the pumpset controller panel:
 - fuel gauges
 - indicators
 - main isolating switch
- water-based fire-suppression system applications as defined in AS 2118 Automatic fire sprinkler systems
- legislative and industry requirements:
 - relevant Commonwealth and state or territory building acts, regulations and codes, such as the National Construction Code (NCC)
 - AS 1851 Routine service of fire protection systems and equipment
- relevant legislation relating to testing of fire protection equipment
- organisational requirements:
 - client-specific contractual requirements
 - documentation and information systems and processes
 - legal and organisational policies and guidelines, including personnel practices and guidelines outlining work roles, responsibilities and delegations
 - using electronic job scheduling and communication devices
- commissioning tests detailed in relevant Australian standards and manufacturers documentation to verify performance of an installed, repaired or altered piece of equipment or system
- checking for compliance including applying inspections, tests and survey requirements to equipment and systems according to relevant Australian standards to determine that they are:
 - capable of operating as intended when originally installed
 - still suitable for the fire hazard or risk being protected as no change in occupancy or use of the area protected has occurred since the equipment or system was installed or last modified

- providing the coverage and protection needed to meet original design and performance requirements
- checking for compliance, including reviewing documentation to verify that installed systems comply with legislative and industry requirements such as:
 - buildings essential services or fire safety measures listing
 - relevant Commonwealth and state or territory building acts, regulations and codes
 - relevant Australian standards listed on essential service listing
 - environmental regulations
- water-based fire-suppression systems as defined in AS 2118 Automatic fire sprinkler systems and AS 2419 Fire hydrant installations:
 - combined sprinkler and hydrant systems
 - deluge systems
 - dry systems
 - hydrant systems
 - pre-action or recycle systems
 - residential and domestic systems
 - tail-end systems
- specific locations where test equipment can be attached to measure and record water flow and pressure to meet legislative and industry requirements
- water flow test equipment:
 - differential pressure gauges
 - hand tachometers
 - manometers
 - orifice plates
 - pitot tube water flow test instrument
 - ultrasonic flow measuring equipment
 - ultrasonic thickness gauges
 - venturi devices
- system interface components such as flow, pressure, tamper and valve positioning switches that operate signals between the water-based fire-suppression system and other services such as:
 - building heating, ventilation and air conditioning (HVAC) services
 - fire brigade monitoring providers
- other life safety systems:
 - warning systems
 - fire indicator panel (FIP)
- methods of applying sustainability principles and concepts
- routine service frequency schedules:
 - reference to AS 1851 Routine service of fire protection systems and equipment schedules of work conducted at regular frequencies that relate to the work scope for weekly, monthly, and six-monthly inspection and testing activities

- how to access relevant information, including codes and standards
- tools, materials and equipment used for conducting functional water flow testing
- work health and safety (WHS) requirements for conducting functional water flow testing.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3044 Install distribution and range pipes

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3044A Install distribution and range pipes. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install distribution and range pipes to carry all commonly used fire extinguishing agents, above and below ground. The installation may involve a new system or an alteration (extension or modification) to an existing system.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify installation requirements.	1.1 Obtain, read and determine distribution and range pipes requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check the serviceability of appropriate tools and equipment, including personal protective equipment (PPE).
 - 2.3 Prepare work area to support efficient installation of distribution and range pipes.
- 3 Install piping system.
 - 3.1 Set out pipework and install pipe supports and fixings.
 - 3.2 Apply piping and materials.
 - 3.3 Attach mechanical jointing systems.
 - 3.4 Isolate and drain down system prior to installing pipework to avoid water damage when altering existing systems.
 - 3.5 Reinstate after completing works for water tightness.
 - 3.6 Complete documentation and submit within required timeframes.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3044A Install distribution and range pipes.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3044 Install distribution and range pipes

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3044A Install distribution and range pipes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing distribution and range pipes in both:
 - a new automated fire sprinkler system
 - an existing automated fire sprinkler system, incorporating two rolled grooves, three threaded joins, one mechanical Tee and one barrel union
- providing a free-flowing and leak-free water supply to at least three branches of new and an existing system
- installing a range to feed two sprinkler heads using a mechanical Tee and support all pipework according to AS 2118 Automatic fire sprinkler systems
- relocating two sprinklers in an existing system, including draining down the system.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- legislation, regulations, standards and codes
- processes, procedures and techniques of:
 - installing distribution and range pipes
 - fixing and joining of pipes
 - levelling and alignment
 - roll grooving
- applications of sustainability concepts and principles relating to plumbing, encompassing water and resource usage
- materials storage and environmentally responsible waste disposal relating to distribution and range pipe installation
- general fire protection systems terminology
- functional and operational features of tools and equipment used to install distribution and range pipes:

- threading machines
- roll grooving machines
- roll grooving measuring devices
- ladders
- pipe wrenches
- steel pipe
- roll grooved and threaded fittings and valves
- elevated work platform (EWP)
- sockets
- impact drills
- threaded rod cutters
- hammers and punches
- identification of incorrect roll grooving
- characteristics, application and limitation of approved materials and components:
 - pipe fittings and fixture supports
 - above and below ground pipework
- how to access relevant information including job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used for installing distribution and range pipes
- work health and safety (WHS) requirements for installing distribution and range pipes
- installation requirements for installing distribution, pipework above and below ground and range pipes.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3045 Fit off sprinkler heads, controls and ancillary equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS3045A Fit off sprinkler heads, controls and ancillary equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install sprinkler heads, system controls and ancillary equipment for sprinkler fire protection systems. The installation involves work on a new and existing structure.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.

1.1 Obtain, read and apply sprinkler head and control requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.

1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.

- 1.3 Identify class of sprinkler system and associated design data from system design specifications.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
 - 2.3 Select components and prepare work area to support efficient installation of sprinkler heads, system controls and ancillary equipment.
- 3 Install sprinkler heads and ancillary equipment.
 - 3.1 Set out system following plans, specifications and job instructions.
 - 3.2 Attach fixings and pipe supports.
 - 3.3 Install sprinkler heads, system components and ancillary equipment.
 - 3.4 Isolate system and drain it down to allow connection without causing water damage, then recharge when altering existing systems.
 - 3.5 Complete documentation following quality and work requirements.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3045A Fit off sprinkler heads, controls and ancillary equipment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3045 Fit off sprinkler heads, controls and ancillary equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS3045A Fit off sprinkler heads, controls and ancillary equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing two different automated fire sprinkler systems in both a new and an existing system:
 - three different sprinkler heads with three different escutcheon assemblies: two hard piped drop; one flexible tube assembly, installed and branched according to manufacturer's specifications
 - a mechanical flow switch, incorporating a test arrangement
 - two pressure switch, one pressure switch used for rising pressure alarm and one used for a fall in pressure loop
- producing a plan containing four sprinkler heads spaced according to Ordinary Hazard III
- rectifying a tenancy floor plan that includes:
 - two new sprinkler heads
 - two relocated sprinkler heads
 - two deleted sprinkler heads.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- legislation, regulations, standards and codes relating to fitting off sprinkler heads, controls and ancillary equipment:
- processes, procedures and techniques of:
 - fitting off sprinkler heads, controls and ancillary equipment
 - levelling and alignment for installing underground pipework
- general fire protection systems terminology
- characteristics, application and limitations of different approved materials and components

- design requirements, functions and limitations of the following components:
 - sprinkler heads of at least 6 different types
 - escutcheon plates
 - flexible tube assemblies and their mounting brackets
 - pressure switches
 - flow switches
 - pipe supports and anchors
 - pipe jointing techniques including threading and roll grooving
- functional and operational features of tools and equipment used to fit off sprinkler heads, controls and ancillary equipment
- materials storage and environmentally responsible waste disposal relating to distribution and range pipe installation activities
- how to access relevant information including, job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
- tools, materials and equipment used for installing sprinkler heads, system controls and ancillary equipment for sprinkler fire protection systems
- work health and safety (WHS) requirements for installing sprinkler heads, system controls and ancillary equipment for sprinkler fire protection systems
- installation requirements for installing sprinkler heads, system controls and ancillary equipment for sprinkler fire protection systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3046 Test the integrity of water-based fire protection systems using pressure

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3046A Test the integrity of water-based fire protection systems using pressure. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to test the integrity of water-based fire protection systems using pressure.

It includes performing water pressure testing on fire safety sprinkler and hydrant systems to establish the integrity of the water-based system or to identify and rectify leaks.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------|--|
| 1 Plan the work. | 1.1 Obtain, read and apply water-based fire protection systems requirements from relevant job plans and specifications, codes, Australian Standards, |
|------------------|--|

- manufacturer's specifications and jurisdictional requirements.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Identify materials and components and calculate quantities.
- 2 Prepare for work.
- 2.1 Check material and components for conformity and action any discrepancies.
 - 2.2 Select and check serviceability of tools, equipment and personal protective equipment (PPE) and rectify or report any faults.
 - 2.3 Prepare work area to efficiently test fire protection system.
 - 2.4 Determine the type of test to be performed and prepare appropriate testing equipment.
- 3 Test fire protection systems.
- 3.1 Connect air test equipment to system using pressure test not exceeding 50KPa.
 - 3.2 Connect water test equipment and conduct hydrostatic test according to relevant codes and Australian Standard.
 - 3.3 Record readings from each pressure gauge in format determined by job specifications and quality assurance requirements.
 - 3.4 Isolate water supply and open all water outlets to drain down system.
 - 3.5 Recharge and restore system to operational condition.
 - 3.6 Complete documentation and submit within required timeframe.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.

- 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3046A Test the integrity of water-based fire protection systems using pressure.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3046 Test the integrity of water-based fire protection systems using pressure

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3046A Test the integrity of water-based fire protection systems using pressure. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- testing the integrity of water-based fire protection systems:
 - one water pressure test on a fire sprinkler system
 - one water pressure test on a fire hydrant system.

Note: Tests may be conducted during installation or maintenance of jobs.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- legislation, regulations, standards and codes relating to pressure testing water-based fire protection systems:
- policies, procedures and environmental requirements and sustainability principles relating to pressure testing water-based fire protection systems
- functional and operational features of tools and equipment used in pressure testing water-based fire protection systems
- safety requirements when using compressed air
- processes, procedures and techniques of:
 - testing water-based fire protection systems
- characteristics, application and limitations of approve materials and components:
 - sprinkler heads
 - roll groove and threaded joints
 - steel pipe

- chlorinated polyvinyl chloride (CPVC) pipe
- non-ferrous pipe
- alarm valves
- ball valves
- gate valves
- butterfly valves
- waste and test valves
- flexible droppers
- fire hydrant valves
- booster and suction arrangements
- check valves
- materials storage and environmentally responsible waste disposal relating to pressure testing water-based fire protection systems
- how to access relevant information including, job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
- tools, materials and equipment used for testing the integrity of water-based fire protection systems
- work health and safety (WHS) requirements for testing the integrity of water-based fire protection systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3047 Test and maintain automatic fire sprinklers

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3047A Test and maintain automatic fire sprinklers. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to conduct up to, and including five yearly routine service preventative maintenance, fault identification and repair of automatic fire sprinkler installations in new or existing, domestic or commercial structures.

It includes performing maintenance tasks following specifications detailed in maintenance schedules, removing faulty items or components and replacing equipment or components to meet specifications.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPFS3034 Install control valve assemblies, actuating devices and local alarms

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------|--|
| 1 Plan for work. | 1.1 Access, read and apply automatic fire sprinkler maintenance requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional |
|------------------|--|

- requirements.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
 - 2.2 Identify materials and components and calculate quantities.
 - 2.3 Check materials and components for conformity with delivery docket and report any inconsistencies.
 - 2.4 Carry out preparation of work area to support efficient service maintenance of automatic fire sprinklers.
- 3 Perform routine maintenance tasks.
 - 3.1 Isolate system interfaces.
 - 3.2 Apply maintenance tasks, following specifications detailed in maintenance schedule and AS 1851 Routine service of fire protection systems and equipment.
 - 3.3 Check mechanical equipment and system components using appropriate instruments.
 - 3.4 Identify faulty items or components and select appropriate service procedure.
- 4 Repair or replace faulty components and test job.
 - 4.1 Isolate system and drain down, as required, to complete tasks without causing water damage.
 - 4.2 Remove faulty items or components without damage to other components.
 - 4.3 Select replacement items or components to meet manufacturer's specifications.
 - 4.4 Adjust equipment or components as required.
 - 4.5 Recharge system with water.
 - 4.6 Carry out operational system check to ensure job

- specifications and quality requirements are met.
- 4.7 Prepare maintenance report in appropriate format.
- 5 Clean up.
- 5.1 Clear the work area, and dispose of or recycle materials as applicable, following quality and work requirements and job specifications.
- 5.2 Clean, check, maintain and store tools and equipment following manufacturer's and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3047A Test and maintain automatic fire sprinklers.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3047 Test and maintain automatic fire sprinklers

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3047A Test and maintain automatic fire sprinklers. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- conducting routine service and maintenance up to five-year frequency of the following sprinkler systems:
 - wet system
 - deluge system
 - pre-action system, and applying the following tasks to all three systems:
 - replacing the seating rubber/diaphragm
 - replacing the face gasket/rubber
 - replacing any serviceable gaskets or rubbers on the drain and test valves
 - repacking an O, S & Y valve to manufacturer's specification
 - replacing all serviceable components on a gate valve
- performing the following on two different systems:
 - diagnose and repair faults
 - service relevant components as required
 - replace components as required
- performing system interfaces isolation of fire detection control indicating equipment (FDCIE) and fire pumpsets.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- documentation and reporting of defects and repairs in accordance with AS 1851 Routine service of fire protection systems and equipment
- characteristics, applications and limitations of approved materials and components, including:
 - alarm valves, wet, dry, deluge and pre-action
 - isolation valves, gate, butterfly and O, S & Y

- drain and test valves
- sluice valves
- water motor alarms
- pressure gauges
- air compressors
- air dryers
- pressure switches
- flow switches
- jacking pumps
- fire Sprinkler heads
- AS 1851 Routine service of fire protection systems and equipment preventative maintenance requirements of sprinkler systems:
 - valve overhauls
 - sprinkler samples
 - kitchen hood sprinklers
 - duct sprinklers
 - spray booth sprinklers
- how to access relevant information, including relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements for conducting routine service maintenance of automatic fire sprinklers
- tools, materials and equipment used for conducting routine service maintenance of automatic fire sprinklers
- work health and safety (WHS) requirements for conducting routine service maintenance of automatic fire sprinklers.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3048 Install fixed fire pumpsets

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3048A Install fixed fire pumpsets. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install fixed fire pumpsets, including the pump base, power sources, pumps, pipework and associated components in new or existing, domestic or commercial structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan the work.	1.1 Access, read and apply fixed fire pumpsets installation requirements relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
2 Prepare for work.	2.1 Create a materials list and collect materials

- 2.2 Identify materials and components and calculate quantities.
 - 2.3 Check conformity of materials and components with delivery docket.
 - 2.4 Sequence tasks.
 - 2.5 Inspect site and determine location for fixed fire pumpset.
 - 2.6 Carry out preparation of work area to ensure efficient installation.
 - 2.7 Identify pump base requirements from drawings and specifications.
 - 2.8 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
- 3 Install fixed fire pumpsets.
 - 3.1 Set out and install pump base.
 - 3.2 Perform the installation of pumpset, pipework and associated valves.
 - 3.3 Check pipework, connections and pumpset valves to ensure they are watertight and operating correctly.
 - 3.4 Pressure test piping system and record results.
 - 3.5 Test pumpset and record test data in required format.
 - 3.6 Complete documentation as required.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3048A Install fixed fire pumpsets.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3048 Install fixed fire pumpsets

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS3048A Install fixed fire pumpsets. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by installing fixed fire pumpsets to *AS 2419 Fire hydrant installations system design, installation and commissioning*, including:

- installing pump base and pump
- installing pipework and associated valves and components
- installing pressure relief valve and line
- pressure testing piping system and pumpset
- pressure maintenance pump (jockey pump)
- pump start arrangement (pressure switch loop).

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- procedures and techniques for:
 - installation of fixed fire pumpset
 - pressure testing equipment
 - aligning pump and driver
- structural systems, building materials and services that support or surround fixed fire pumpsets
- characteristics, applications and limitations of approved materials and components of fixed fire pumpsets, above and below ground
- types and operation of pumps used in fire protection:
 - end suction
 - multistage multi outlet centrifugal
 - split case
 - turbine
 - screw

- jacking pumps
- jockey pumps
- types, requirements and operation of pump control panels
- pump room requirements
 - ventilation requirements
- vibration dampening
- flexible tube vibration isolation
- diesel driver exhaust sizing requirements
- materials storage and environmentally responsible waste disposal relating to installing fixed fire pumpsets
- how to access relevant information, including relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements to install fixed fire pumpsets
- tools, materials and equipment used to install fixed fire pumpsets
- work health and safety (WHS) requirements to install fixed fire pumpsets.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS3049 Conduct preventive maintenance on fixed fire pumpsets

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical errors corrected in Pre-requisite unit and Element and Performance Criteria 1.3.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS3049A Conduct preventive maintenance on fixed fire pumpsets. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to conduct preventive maintenance on circulatory systems, packed glands and special valves associated with fixed fire pumpsets.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPFS3041 Inspect and test fire pumpsets

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare for work.
 - 1.1 Access, read and apply preventative maintenance on fixed pumpset requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
 - 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Sequence tasks specified in relevant maintenance schedules.
 - 1.4 Identify materials and components and calculate quantities.
 - 1.5 Select and check serviceability of tools, equipment and personal protective equipment (PPE).
 - 1.6 Carry out preparation of work area for efficient preventive maintenance of fixed fire pumpsets.
 - 1.7 Check materials and components for conformity with delivery docket.
- 2 Perform preventive maintenance tasks on pump circulatory system.
 - 2.1 Isolate pump following workplace requirements before conducting maintenance tasks.
 - 2.2 Disassemble cooling line strainer, remove and inspect screen, and identify and report faulty materials.
 - 2.3 Clean screen and reassemble strainer following workplace procedures.
 - 2.4 Check operation of circulatory valve and replace valve if required.
 - 2.5 De-isolate pump, conduct start test, and check water flow at tundish or sight glass.
- 3 Perform preventive maintenance tasks on packing glands.
 - 3.1 Disassemble pump packing gland housing and remove gland plate.
 - 3.2 Remove and dispose of packing using appropriate packing extractors and following quality and

- environmental requirements.
- 3.3 Repack gland following manufacturer's instructions.
 - 3.4 Reinstall gland plate and adjust as required.
 - 3.5 De-isolate, operate and check pump to ensure packing gland leak rate meets manufacturer's instructions and quality requirements.
- 4 Perform preventive maintenance tasks on special pump valves.
- 4.1 Drain down pump pipework and check to ensure there is no residual water pressure.
 - 4.2 Disassemble special valves and inspect housing.
 - 4.3 Inspect internal components of special valves and install replacements.
 - 4.4 Reassemble special valves, de-isolate pump and check system to ensure it is operating correctly.
- 5 Report anomalies and complete documentation.
- 5.1 Record inspection and testing results and report anomalies following quality requirements.
 - 5.2 Complete preventive maintenance documentation and forward to relevant persons for action.
- 6 Clean up.
- 6.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 6.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3049A Conduct preventive maintenance on fixed fire pumpsets.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3049 Conduct preventive maintenance on fixed fire pumpsets

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical errors corrected in Pre-requisite unit and Element and Performance Criteria 1.3.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS3049A Conduct preventive maintenance on fixed fire pumpsets. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- performing preventive maintenance on a diesel-driven, packed gland fixed fire pumpset in accordance with AS 2941 Fixed fire protection installations across two different jobs and include:
 - a circulatory system
 - a packing gland
 - a pressure relief valve, and
 - a pressure reducing valve
- performing system interfaces isolation of fire detection control indicating equipment (FDCIE) and fire pumpsets.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- processes, procedures and techniques of:
 - conducting preventive maintenance on fixed fire pumpsets
 - isolating and draining down pump pipework
- characteristics, applications and limitations of approved materials and components:
 - end suction pumps
 - multistage multioutlet pumps
 - screw pumps

- turbine pumps
- split case pumps
- pressure relief valves
- pressure reducing valves
- circulatory system
- how to access relevant information, including relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. to conduct preventive maintenance on fixed fire pumpsets
- tools, materials and equipment used to conduct preventive maintenance on fixed fire pumpsets
- work health and safety (WHS) requirements to conduct preventive maintenance on fixed fire pumpsets.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS4021 Commission domestic and residential fire suppression sprinkler systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS4021A Commission domestic and residential fire suppression sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to test and commission domestic and residential fire suppression sprinkler systems in buildings up to four storeys in height containing communal catering and residential quarters.

It covers preparation for the work, identification and confirmation of system specifications and requirements, physical testing and commissioning of the systems, and work finalisation processes including records and documentation.

The role may involve interaction with architects, builders, suppliers and relevant planning authorities and requires a sound understanding of applicable legislation including work health and safety (WHS).

Site locations for work application are domestic and residential and may be a new work site or an existing structure, including minimum of a communal catering and living area and multiple residential quarters (or equivalent), and a fire suppression sprinkler system for a domestic residence containing a minimum of two rooms.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Prepare for work.
 - 1.1 Obtain current approved plans and specifications.
 - 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Apply quality assurance requirements to comply with internal and external policies, procedures, standards and authorities.
 - 1.4 Consult with associated persons to plan and sequence tasks.
 - 1.5 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
 - 1.6 Prepare work area to support effective commissioning process.

 - 2 Identify system requirements.
 - 2.1 Identify and confirm system design requirements using job specifications, authorities' requirements and standards.
 - 2.2 Identify commissioning requirements using job specifications, authorities' requirements and standards.

 - 3 Test and commission system.
 - 3.1 Check sprinkler systems to ensure type and installation conform to standards, job specifications, manufacturer recommendations and authorities' requirements.
 - 3.2 Test system operation and adjust as required to meet all requirements and specifications.
 - 3.3 Commission and maintain system to ensure correct operation according to standards, and manufacturer and job specifications.

 - 4 Clean up work area.
 - 4.1 Clear the work area of materials and dispose of, reuse or recycle materials according to legislation, regulations, environmental codes of practice and job specifications.
 - 4.2 Clean tools and equipment check for damage and malfunction and store according to manufacturer

recommendations and workplace procedures.

- 4.3 Access information to complete documentation according to workplace requirements and submit within specified timeframes, including all required information.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS4021A Commission domestic and residential fire suppression sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS4021 Commission domestic and residential fire suppression sprinkler systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS4021A Commission domestic and residential fire suppression sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To determine competency in this unit a candidate must meet the performance criteria for this unit by:

- commissioning and testing a fire suppression sprinkler system for a domestic and residential fire suppression sprinkler systems in buildings up to four storeys in height containing communal catering and residential quarters and a fire suppression sprinkler system for a domestic residence containing a minimum of two rooms
- correctly interpreting plans and specifications to complete work to the specified standard within accepted timeframes
- complying with appropriate legislation, organisational processes and regulatory requirements.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- components and materials of fire suppression sprinkler systems including:
 - actuating devices
 - alarms
 - control valve assemblies
 - piping
 - sprinkler heads
 - unplasticised polyvinyl chloride (uPVC), steel or copper pipes and other approved materials
- job safety analysis (JSA) and safe work method statements (SWMS)
- National Fire Protection Association (NFPA) and Factory Mutual performance-based codes of practice
- pressure test systems and procedures

- process of installing, testing and commissioning domestic and residential fire suppression sprinkler systems
- processes for accessing information and for calculating material requirements
- properties of water, including pressure and flow rates
- SI system of measurements
- safe work practices relating to testing and commissioning domestic and residential fire suppression sprinkler systems including:
 - hazard control
 - personal protective equipment (PPE) prescribed under legislation, regulations and workplace policies and practices
 - handling of materials
 - personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
- environmental requirements including:
 - water quality management
 - clean-up protection
 - stormwater protection
 - waste management
- quality assurance information including:
 - Australian standards
 - Environment Protection Authority (EPA)
 - internal company quality assurance policy and risk management strategy
 - International Standards Organisation (ISO)
 - site safety plan
 - workplace operations and procedures
- tools and equipment including:
 - hand and power tools
 - test equipment
- sustainability principles and concepts including efficient:
 - water usage
 - harvesting
 - disposal
- planning and site information including:
 - charts and hand drawings
 - instructions issued by authorised organisational or external personnel
 - job drawings and specifications
 - manufacturer specifications and instructions
 - safety data sheets (SDS)
 - organisation work specifications and requirements
 - work schedules, plans and specifications
 - spoken, written and graphical instructions

- regulatory and legislative requirements, particularly those pertaining to:
 - building codes
 - work health and safety (WHS) and environmental requirements
 - plumbing regulations
 - relevant Australian standards, including AS 2118.1 Automatic fire sprinkler systems
 - signage
 - local authorities' requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS4022 Commission and maintain special hazard fire suppression systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Foundation Skills. Typographical error corrected in Elements and Performance Criteria 4.2.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS4022A Commission and maintain special hazard fire suppression systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to test, commission and maintain special hazard fire suppression systems.

It covers preparation for the work, identification and confirmation of system specifications and requirements, physical testing and commissioning of the systems, and conduct of systems maintenance and work finalisation processes, including records and documentation.

Site location for work application may be either domestic or residential and may be a new work site or an existing structure being renovated, extended, restored or maintained.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

All technicians performing work described in this unit that involves the handling of prescribed ozone depleting substances (ODS) and synthetic greenhouse gases (SGG) extinguishing agents must hold an appropriate extinguishing agent handling licence (EAHL).

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|---|
| 1 Prepare for work | 1.1 Obtain plans and specifications. |
| | 1.2 Apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |
| | 1.3 Identify and adhere to quality assurance requirements to according to workplace requirements. |
| | 1.4 Commission, inspect, test and maintain ozone depleting substances (ODS) and synthetic greenhouse gases (SGG) legislative and industry requirements to activities for special hazard fire suppression systems. |
| | 1.5 Plan and sequence tasks in conjunction with others involved in or affected by the work. |
| | 1.6 Select and check tools, equipment and materials for serviceability prior to commissioning and maintaining special hazard fire suppression systems, including personal protective equipment. |
| | 1.7 Prepare work area to support efficient commissioning process. |
| 2 Identify system requirements. | 2.1 Identify and confirm service design requirements from job specifications and are according to standards. |
| | 2.2 Identify testing and commissioning requirements of special hazard fire suppression systems according to standards, authorities' requirements and job specifications. |
| 3 Test and commission system. | 3.1 Check special hazard fire suppression systems to ensure type and installation conform to standards, job specifications, manufacturer recommendations and authorities' requirements. |
| | 3.2 Test operation of system according to job specifications, manufacturer recommendations and authorities' requirements, including ODS and SGG legislative requirements, and is adjusted as required. |

- | | | |
|---|---------------------|--|
| | 3.3 | Commission system to ensure correct operation according to standards, and manufacturer and job specifications. |
| 4 | Maintain system. | |
| | 4.1 | Identify service and maintenance requirements from manufacturer specifications or authorities' requirements. |
| | 4.2 | Check and fit replacement components periodically and as required according to specifications. |
| | 4.3 | Conduct maintenance and repair of system observing maintenance schedule described in current Australian standard, and manufacturer and/or authorities' requirements, including ODS and SGG legislative requirements. |
| | 4.4 | Observe sustainability principles and concepts when preparing for and undertaking work process. |
| 5 | Clean up work area. | |
| | 5.1 | Clear work area and dispose of reused or recycled materials, according to legislation, regulations, codes of practice and job specification. |
| | 5.2 | Clean, check, maintain and store tools and equipment according to manufacturer recommendations and workplace procedures. |
| | 5.3 | Access information and complete documentation according to workplace requirements. |

Foundation Skills

A person demonstrating competency in this unit must have the following language, literacy, numeracy and employment skills:

- technical skills to test, commission and maintain a special hazard protection system consisting of an extinguishing agent, piping, actuating devices and sprinkler delivery
- technology skills to:
 - access and understand site-specific instructions in a variety of media
 - use mobile communication technology.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS4022A Commission and maintain special hazard fire suppression systems.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS4022 Commission and maintain special hazard fire suppression systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Foundation Skills. Typographical error corrected in Elements and Performance Criteria 4.2.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS4022A Commission and maintain special hazard fire suppression systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- locating, interpreting and applying relevant information, standards and specifications to testing and commissioning special hazard fire suppression systems
- applying safety requirements throughout the work sequence, including electrical safety requirements and the use of personal protective clothing and equipment
- testing and commissioning one special hazard fire suppression system (not prescribed ODS or SGG extinguishing agent), being a gaseous, chemical or fluid-based system; and inspect, test and maintain one prescribed ODS or SGG system, ensuring:
 - application of sustainability principles and concepts
 - correct identification of location, design specification and details of proposed service
 - correct selection and use of appropriate processes, tools and equipment
 - completion of all work to specification
 - compliance with regulations, standards and organisational quality procedures and processes
 - communicating and working effectively and safely with others.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- work health and safety are to be according to commonwealth, state and territory legislation and regulations:
 - handling of materials

- hazard control
- personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
- safe operating procedures, including recognising and preventing hazards associated with:
 - electricity
 - hazardous materials and substances
 - other machines
 - surrounding structures and facilities
 - trip hazards
 - underground services
 - use of tools and equipment
 - work site visitors and the public
 - working at heights
 - working in confined spaces
 - working in proximity to others
- use of firefighting equipment
- use of first aid equipment
- workplace environment and safety
- environmental requirements cover water quality management:
 - clean-up protection
 - complying with ODS and SGG legislation, codes and regulations, e.g. Ozone Protection and Synthetic Greenhouse Gas Management Act 1989
 - preventing emissions of prescribed ODS and SGG extinguishing agents
 - stormwater protection
 - waste management
- materials:
 - actuating devices
 - alarms
 - control valve assemblies
 - unplasticised polyvinyl chloride (PVC-U), steel or copper pipes or other approved materials
 - special hazard fire suppression agents, including prescribed ODS and SGG materials
 - sprinkler heads
- special hazard fire suppression systems:
 - carbon dioxide and other gases (such as inergen and argonite)
 - chemical reaction and explosion suppression systems
 - dry chemical
 - foam
 - prescribed ODS and SGG extinguishing agents (such as halon and NAF S-III)

- water
- water mist
- information:
 - charts and hand drawings
 - instructions issued by authorised organisational or external personnel
 - job drawings
 - manufacturer specifications and instructions
 - material safety data sheets (MSDS)
 - memos
 - organisation work specifications and requirements
 - plans and sketches
 - regulatory and legislative requirements, particularly those pertaining to:
 - building codes
 - WHS and environmental requirements, including ODS and SGG legislation, codes and regulations
 - plumbing regulations
 - relevant Australian standards, including AS2118 Automatic fire sprinkler systems and AS1851 Maintenance of fire protection systems and equipment
 - safe work procedures relating to testing and commissioning special hazard fire suppression systems
 - signage
 - verbal, written and graphical instructions
 - work bulletins
 - work schedules, plans and specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS4023 Commission fire system pumpsets

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS4023A Commission fire system pumpsets. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to test and commission a fire system pumpset.

It covers preparation for the work, identification and confirmation of system specifications and requirements, physical testing and commissioning of systems, and finalisation of work processes, including the completion of records and documentation.

The role may involve interaction with architects, builders, suppliers and relevant planning authorities and requires a sound understanding of applicable standards and legislation including work health and safety (WHS).

This unit's requirements may be carried out by experienced tradespersons such as hydraulic design consultants, plumbers or plumbing contractors who employ a team of plumbers.

Site location for work application may be either domestic or residential and may be a new work site or an existing structure.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare for work.
 - 1.1 Obtain current approved plans and specifications.
 - 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental instructions.
 - 1.3 Apply quality assurance requirements to comply with internal and external policies, procedures, standards and authorities.
 - 1.4 Consult with others to plan and sequence tasks.
 - 1.5 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
 - 1.6 Prepare work area to support effective commissioning process.

- 2 Identify system requirements.
 - 2.1 Identify and confirm system design requirements from job specifications according to standards.
 - 2.2 Identify testing and commissioning requirements of fire system pumpset according to standards, authorities' requirements and job specifications.

- 3 Test and commission system.
 - 3.1 Check fire system pumpset and pump controls to ensure type and installation conform to standards, job specifications, manufacturer recommendations and authorities' requirements.
 - 3.2 Test operation of pumpset according to job specifications, manufacturer recommendations and authorities' requirements and adjust as required.
 - 3.3 Commission pumpset to ensure correct operation according to standards and manufacturer and job specifications.

- 4 Clean up work area.
 - 4.1 Clear the work area of materials and dispose of, reuse or recycle materials according to legislation, regulations, environmental codes of practice and job specifications.
 - 4.2 Clean tools and equipment, check for damage and malfunction and store according to manufacturer

recommendations and workplace procedures.

- 4.3 Access information to complete documentation according to workplace requirements and submit within specified timeframes.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS4023A Commission fire system pumpsets.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS4023 Commission fire system pumpsets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS4023A Commission fire system pumpsets. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- testing and commissioning one fire system pumpset, and
 - interpreting plans and specifications correctly to complete work to the specified standard within accepted timeframes
 - complying with appropriate legislation, organisational processes and regulatory requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- job safety analysis (JSA) and safe work method statements (SWMS)
- National Fire Protection Association (NFPA) and Factory Mutual performance-based codes of practice
- performance measures for fire system pumpsets
- process to install, test and commission fire system pumpsets
- processes for accessing information and for calculating material requirements
- types of fire system pumpsets including:
 - centrifugal
 - close coupled, long coupled with mechanical joints or belt driven by an electric or petrol and diesel motor
 - multi-stage turbine
 - positive displacement
 - submersible and electric and compression ignition driven pumps
- pump controls including:
 - automatic, including float, level, flow or pressure switches
 - manual
- properties of water including:

- pressure
- flow rates
- atmospheric pressure
- test systems, equipment and procedures
- SI system of measurements
- work health and safety practices relating to testing and commissioning fire system pumpsets including:
 - handling of materials
 - hazard control
 - personal protective clothing and equipment
 - working with electricity
 - hazardous materials and substances
 - use of first aid equipment
 - workplace environment and safety
- environmental requirements including:
 - water quality management
 - clean-up protection
 - stormwater protection
 - waste management
- sustainability principles and concept including:
 - efficient energy use
 - disposing of waste material to ensure minimal environmental impact
 - selecting appropriate components to ensure minimal environmental impact
- quality assurance requirements including:
 - Environment Protection Authority (EPA)
 - internal company quality assurance policy and risk management strategy and workplace operations and procedures
 - International Standards Organisation (ISO)
- tools and equipment including:
 - hand and power tools
 - test equipment
- planning and site information including:
 - Australian building and plumbing codes specifically performance requirements for fire system pumpsets
 - standards applicable to installing and commissioning fire system pumpsets including AS2941 Fixed fire protection installations - Pumpset systems and AS2118 .1 Automatic fire sprinkler systems
 - charts, hand drawings, plans and sketches
 - instructions issued by authorised organisational or external personnel
 - manufacturer specifications and instructions
 - safety data sheets (SDS)

- organisation work specifications and requirements
- WHS and environmental requirements
- plumbing regulations
- signage
- work schedules, plans and specifications.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS4024 Design residential fire sprinkler systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Pre-requisite unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS4024A Design residential and domestic fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design domestic and residential fire sprinkler systems using hydraulic calculations.

It includes determination of system requirements, detailed design and recording of system plans.

In some jurisdictions this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPFS3037 Install residential life safety sprinkler systems

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------|--|
| 1 Prepare for design process. | 1.1 Identify and confirm the nature and scope of design task from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
|-------------------------------|--|

- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Consult with stakeholders as required.
 - 1.4 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
 - 1.5 Prepare the work area in which the design process is to be conducted.
- 2 Determine system requirements.
- 2.1 Obtain and confirm information specifications for the required work.
 - 2.2 Specify regulations and standards relevant to the work.
 - 2.3 Identify and extract relevant data from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
 - 2.4 Identify and establish building classification and hazard ratings according to standards and other relevant regulations.
- 3 Design sprinkler system.
- 3.1 Establish water supply needs and draw graphs for the automatic fire sprinkler system.
 - 3.2 Size pipework to manufacturer specifications and standards using hydraulic calculations.
 - 3.3 Design sprinkler system to meet plan specifications, standards, manufacturer's recommendations and water supply data.
 - 3.4 Select sprinkler heads of appropriate size, spray pattern, temperature and finish.
 - 3.5 Plot sprinkler spacing according to manufacturer's specifications, standards and relevant statutory and regulatory authority regulations.
 - 3.6 Create pipe layout drawings according to standards and workplace requirements.

- 4 Finalise work.
 - 4.1 Document calculations and other supporting evidence to support design.
 - 4.2 Optimise material specifications according to standards from the proposed design.
 - 4.3 Prepare fabrication sheets and material lists.
 - 4.4 Record plans according to regulatory authorities' and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS4024A Design residential and domestic fire sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS4024 Design residential fire sprinkler systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Pre-requisite unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS4024A Design residential and domestic fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- using hydraulic calculations to design a fire sprinkler system for a residential complex containing a minimum of a communal catering and living area and multiple residential quarters (or equivalent) and also a fire sprinkler system for a domestic residence containing a minimum of two rooms.

In doing so the person must:

- correctly interpret plans and specifications to complete work to the specified standard within accepted timeframes
- comply with appropriate legislation, organisational processes and regulatory requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- calculating and measuring techniques and their application:
 - SI system of measurements
 - calculating material requirements
- components and materials of fire suppression sprinkler systems and their operating characteristics:
 - actuating devices
 - alarms
 - control valve assemblies
 - piping

- sprinkler heads
- process and design techniques, materials and technology:
 - calculators
 - design data
 - design tables
 - drawing and drafting equipment
 - reference materials
 - computers running appropriate computer-aided design (CAD) software
 - drafting materials
 - plans
- job safety analysis (JSA) and safe work method statements (SWMSs)
- accessing and using information:
 - charts and hand drawings
 - instructions issued by authorised organisational or external personnel
 - job drawings
 - manufacturer specifications and instructions
 - organisation work specifications and requirements
 - plans and sketches signage
 - verbal, written and graphical instructions
 - work bulletins
 - work schedules, plans and specifications
- regulatory and legislative requirements
- properties of water including pressure and flow rates
- work health and safety (WHS) related to designing residential and domestic fire sprinkler systems
- environmental requirements and sustainability principles
- quality assurance requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS4025 Commission fire alarm and detection system interface devices

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS4025A Commission fire alarm and detection system interface devices. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to commission fire alarm and detection interface systems.

It covers preparation for the work, identification and confirmation of system specifications and requirements, physical testing and commissioning of the system interface devices, and work finalisation processes, including records and documentation.

The role may involve interaction with architects, builders, suppliers and relevant planning authorities and requires a sound understanding of applicable legislation including work health and safety (WHS).

This units' requirements may be carried out by experienced tradespeople such as hydraulic design consultants, plumbers or plumbing contractors who employ a team of plumbers.

Site location for work application may be a new work site or an existing structure.

The skills and knowledge described in this unit require a licence to practice in a workplace where plant and equipment interface devices operate at voltages above extra low voltage (above 50 V AC or 120 V DC).

Other regulations related to electrical and plumbing work may apply in some jurisdictions.

Practice in the workplace and during training is also subject to work health and safety regulations and contractual training obligations, such as those required under apprenticeship agreements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|--|
| 1 Prepare for work. | 1.1 Obtain current approved plans and specifications. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and sustainability principles. |
| | 1.3 Apply quality assurance requirements to comply with internal and external policies, procedures, standards and authorities. |
| | 1.4 Consult with all associated persons to plan and sequence tasks. |
| | 1.5 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE). |
| | 1.6 Prepare work area to support effective commissioning process. |
| 2 Identify system requirements. | 2.1 Identify and confirm system design requirements from job specifications according to standards. |
| | 2.2 Identify and determine system commissioning requirements using relevant Australian standards, statutory and regulatory authorities' requirements and job specifications. |
| 3 Test and commission system. | 3.1 Check fire alarm and detection system interface devices to ensure type and installation conform to relevant Australian standard, job specifications, manufacturer recommendations and authorities' requirements. |
| | 3.2 Test operation of system interface devices and adjust as required according to Australian standard, job specifications, manufacturer recommendations and authorities' requirements. |

- 3.3 Commission and maintain system interface devices to ensure correct operation according to relevant standards, and manufacturer and job specifications.
- 4 Clean up work area.
 - 4.1 Clear the work area of materials and dispose of, reuse or recycle materials according to legislation, regulations, environmental codes of practice and job specifications.
 - 4.2 Clean tools and equipment, check for damage and malfunction and store according to manufacturer recommendations and workplace procedures.
 - 4.3 Access information to complete documentation according to workplace requirements and submit within specified timeframes.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS4025A Commission fire alarm and detection system interface devices.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS4025 Commission fire alarm and detection system interface devices

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS4025A Commission fire alarm and detection system interface devices. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- commissioning a fire alarm and detection system interface device, including a pressure switch and a flow switch, plus an actuator and a control and indicating panel and in doing so:
 - correctly interpret plans and specifications to complete work to the specified standard within accepted timeframes
 - comply with appropriate legislation, organisational processes and regulatory requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- components and materials of fire alarm and detection system interface devices including:
 - pressure switches
 - flow switches
 - actuators
 - solenoids
 - valve monitoring devices
- verifying interface device operations, including:
 - alarm volume
 - annunciators
 - audible, visible and combination alarms

- controls
- coordination of alarm signals with other services
- dispatching systems
- public reporting systems
- signal transmission
- tactile alarm appliances for people with disabilities
- zone alarms
- correct location and setting of interface devices to meet system design standards
- difference between extra low voltage and low voltage system interface wiring connection
- job safety analysis (JSA) and safe work method statements (SWMS)
- process of installing, testing and commissioning fire alarm and detection system interface devices
- systems operations and procedures
- properties of water including pressure and flow rates
- relevant statutory requirements related to commissioning fire alarm and detection system interface devices including:
 - automatic smoke and heat venting systems
 - air handling systems
 - emergency warning and intercommunication systems
- statutory and regulatory authorities including:
 - Commonwealth government
 - state or territory governments
 - local authorities
- sources of information and processes for calculating suitable replacement of interface devices
- SI system of units
- standards applicable to the service including:
 - AS 1670.1 Fire detection, warning, control and intercom systems – System design, installation and commissioning – Part 1 Fire
 - AS2118.1 Automatic fire sprinkler systems Part 1: General systems
 - AS1851 Routine service of fire protection systems and equipment
- safe work practices associated with commissioning fire alarm and detection interface systems including:
 - working with electricity
 - handling of materials
 - hazard control
 - PPE
 - use of first aid equipment
- environmental requirements and sustainability principles including:
 - clean-up protection
 - stormwater protection

- waste management
- efficient energy use
- efficient use and recycling of material
- selecting appropriate components to ensure minimal environmental impact
- quality assurance requirements including:
 - Australian standards
 - Environment Protection Authority (EPA)
 - internal company quality assurance policy and risk management strategy
 - International Standards Organisation
 - site safety plan
 - workplace operations and procedures.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS4026 Commission firefighting appliances

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS4026A Commission firefighting appliances. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to commission firefighting appliances.

It covers preparation for the work, identification and confirmation of system specifications and requirements, physical testing and commissioning of appliances, and work finalisation of work processes, including completing records and documentation.

The role may involve interaction with architects, builders, suppliers and relevant planning authorities and requires a sound understanding of applicable legislation including work health and safety (WHS).

The unit requirements may be carried out by experienced tradespeople such as hydraulic design consultants, fire services supervisors, plumbers or plumbing contractors who employ a team of plumbers.

Minimum site requirements for work application is a residential building of four storeys on a new work site and an existing structure.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Prepare for work.
 - 1.1 Obtain current approved plans and specifications.
 - 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and sustainability principles.
 - 1.3 Apply quality assurance requirements to comply with internal and external policies, procedures, standards and authorities.
 - 1.4 Consult with all associated persons to plan and sequence tasks.
 - 1.5 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
 - 1.6 Prepare work area to support effective commissioning process.
- 2 Identify system requirements.
 - 2.1 Identify and confirm system design requirements from job specifications according to standards.
 - 2.2 Identify and determine requirements of firefighting appliance commissioning using relevant Australian standards, statutory and regulatory authorities' requirements and job specifications.
- 3 Test and commission system.
 - 3.1 Check firefighting appliances to ensure type and installation conform to standards, job specifications, manufacturer recommendations and authorities' requirements.
 - 3.2 Test operation of appliances and adjust as required according to standards, job specifications, manufacturer's recommendations and authorities' requirements.
 - 3.3 Commission and maintain appliances to ensure correct operation according to standards, manufacturer and job specifications.
- 4 Clean up work area.
 - 4.1 Clear the work area of materials and dispose of, reuse or recycle materials according to legislation, regulations,

- environmental codes of practice and job specifications.
- 4.2 Clean tools and equipment check for damage and malfunction and store according to manufacturer recommendations and workplace procedures.
 - 4.3 Access information to complete documentation according to workplace requirements and submit within specified timeframes.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS4026A Commission firefighting appliances.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS4026 Commission firefighting appliances

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS4026A Commission firefighting appliances. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- commissioning firefighting appliances, including portable fire appliances, wheeled fire extinguishers, delivery lay flat hose and fire hose reel systems for a residential building of a minimum four storeys on a new or existing structure.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- current Australian standards applicable to relevant appliances including:
 - AS/NZS 1841.1 Portable fire extinguishers General requirements
 - AS/NZS 1850 Portable fire extinguishers - Classification, rating and performance testing
 - AS 1851-2012 Routine service of fire protection systems and equipment
 - AS2441 Installation of fire hose reels
 - AS2444 Portable fire extinguishers and blankets -selection and location
 - AS/NZS3504 Fire blankets
 - AS3565 Meters for water supply
 - AS4077 Fire protection fire extinguishing media: halogenated hydrocarbons Specifications for halon 1211 and halon 1301
 - AS4077 Fire protection fire extinguishing media: Code of practice for safe handling and transfer procedures of halon 1211 and halon 1301
 - AS4078 Fire protection fire extinguishing media: carbon dioxide
 - AS4265 Wheeled fire extinguishers
 - AS/NZS4353 Portable fire extinguishers - aerosol type
- components and materials of firefighting equipment and appliances including:
 - delivery lay flat fire hose
 - fire blankets

- fire hose reel systems
- portable fire appliances
- wheeled fire extinguishers
- job safety analysis (JSA) and safe work method statements (SWMS)
- pressure requirements of hose reel systems
- process of installing, testing and commissioning firefighting equipment and appliances
- relevant statutory requirements and authorities related to commissioning firefighting equipment and appliances including:
 - Commonwealth government
 - state governments
 - territories
 - local authorities
 - codes of practice
 - acts and regulations
 - Environment Protection Authority (EPA)
- quality assurance requirements including:
 - internal company quality assurance policy and risk management strategy
 - International Standards Organisation (ISO)
 - site safety plan
 - workplace operations and procedures
- sources of information and processes for the calculation of requirements including:
 - SI system of units
- safe work practices associated with commissioning firefighting appliances including:
 - handling of materials
 - hazard control
 - personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
 - working with electricity
 - use of first aid equipment
- environmental requirements and sustainability principles including:
 - clean-up protection
 - stormwater protection
 - waste management
 - efficient energy use
 - efficient use and recycling of material.
 -

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS4027 Commission fire sprinkler systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPFS4027A Commission fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to commission fire sprinkler systems.

It covers preparing for the work, identifying and confirming system specifications and requirements, physically testing and commissioning systems, and finalising work processes, including completing records and documentation.

The role may involve interaction with architects, builders, suppliers and relevant planning authorities and requires a sound understanding of applicable legislation including work health and safety (WHS).

This unit's requirements may be carried out by experienced tradespeople such as hydraulic design consultants, fire services supervisors, plumbers or plumbing contractors who employ a team of plumbers.

Work may be undertaken on commercial or industrial buildings, which may be new work sites or existing structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Prepare for work | 1.1 Consult with approving authority to determine commissioning inspections and tests required to validate fire sprinkler system performance meet design requirements. |
| | 1.2 Obtain and review documentation required for commissioning. |
| | 1.3 Consult with all associated persons to plan and sequence tasks. |
| | 1.4 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE). |
| | 1.5 Prepare work area to support efficient commissioning process. |
| 2 Confirm that installation of system components correspond to design requirements. | 2.1 Identify fire sprinkler system components and locations on drawings and specifications. |
| | 2.2 Inspect building to confirm that locations of system components correspond to design requirements and report any variances. |
| | 2.3 Confirm types of sprinkler heads are compatible and report if determined as incompatible. |
| | 2.4 Confirm spaces between sprinkler heads are correct and report any variances. |
| | 2.5 Inspect and confirm that pipework is functional and report any jointing and supporting defects. |
| | 2.6 Inspect valves for different commissioning tests to confirm correct type, labelling, and position. |
| | 2.7 Confirm pressure gauge schedule, block plan and interface diagram correspond to design requirements. |
| | 2.8 Check and verify water supply components, including any installed pumpsets against design requirements. |
| | 2.9 Identify changes to the building or existing conditions |

that could affect component performance.

- | | | | |
|---|---|-----|---|
| 3 | Conduct pressure tests and restore system to normal pressure. | 3.1 | Conduct static air-pressure test to confirm integrity of the system, record results according to relevant standards and workplace requirements. |
| | | 3.2 | Conduct high pressure hydraulic test to confirm integrity of the system, record results according to relevant standards and workplace requirements. |
| | | 3.3 | Identify and report leaks. |
| | | 3.4 | Drain system and re-charge at normal pressure according to relevant standards and workplace requirements. |
| 4 | Conduct functional tests. | 4.1 | Conduct water supply functional proving test and record results according to relevant standards. |
| | | 4.2 | Conduct functional tests of system components and interfaces, record results according to relevant standards and design requirements. |
| | | 4.3 | Conduct tests according to environmental and sustainability requirements. |
| 5 | Finalise commissioning process. | 5.1 | Confirm system functionality and compliance with design specifications. |
| | | 5.2 | Confirm componentry is set to operational function and pipework is charged with water according to specifications. |
| | | 5.3 | Clean tools and equipment, check for damage and malfunction and store according to manufacturer recommendations and workplace procedures. |
| | | 5.4 | Access information to complete documentation according to workplace requirements and submit within specified timeframes. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS4027A Commission fire sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS4027 Commission fire sprinkler systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS4027A Commission fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To determine competency in this unit, a person must demonstrate they can commission one wet system connected to fixed pumpsets, one wet system connected to town main supply and one pre-action fire sprinkler system, and in doing so:

- correctly interpret plans and specifications to complete work to the specified standard within accepted timeframes
- comply with appropriate legislation, organisational processes and regulatory requirements.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- design and installation performance requirements of relevant installation standards including:
 - National Fire Protection Association (NFPA)
 - Factory Mutual performance-based codes of practice
 - AS 2118.1 Automatic fire sprinkler systems - General systems
- industry and regulatory requirements for commissioning fire sprinkler systems including:
 - codes and standards
 - environmental and sustainability
 - licensing
 - quality assurance
 - work health and safety (WHS)

- job safety analyses (JSA), safety data sheets (SDS) and safe work method statements (SWMS)
- performance measures for fire sprinkler systems as referenced in design drawings and specifications
- properties of water, including pressure, flow rates and atmospheric pressure
- SI system of measurements
- workplace and equipment safety requirements, including personal protective equipment (PPE) requirements relevant to the job
- fire sprinkler systems including:
 - deluge
 - dry pipe
 - pre-action
 - storage sprinklers
 - wall wetting
 - water mist
 - wet pipe
- approving authorities including:
 - client representative
 - council representative
 - fire brigade official
 - fire protection consultant engineer
 - insurance company representative
 - system designer
- documentation including:
 - as-installed drawings
 - design calculations
 - logbooks
 - operator manuals
- tools and equipment including:
 - digital tachometers
 - flow testing equipment
 - hand tools
 - laser levels
 - measuring devices
 - PPE
 - pressure gauges
- fire sprinkler system components including:
 - air compressors
 - alarm valves
 - ball valves

- brackets
- discharge nozzles
- flow switches
- pipework
- pressure gauges
- pressure reducing valves
- pressure relief valves
- pressure switches
- pumpsets
- solenoids
- sprinkler heads
- water supply valves
- functional tests to check effective operation of:
 - brigade booster connections
 - control and actuator mechanisms including:
 - pressure switches
 - flow switches
 - control valves, including:
 - pressure reducing
 - pressure relief
 - tank inflow
 - interfaces to other systems, including:
 - booster pumps
 - building services
 - control indicating equipment (CIE)
 - control of booster pumpsets
 - fire detection
 - heating, ventilation and air conditioning (HVAC)
 - occupant warning systems
 - valve monitoring controls
 - remote water proving points
 - water supply components, such as tank infill and suction lines.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS5010 Design fire-compliant hydraulic services

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS5010A Design fire-compliant hydraulic services. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to design fire protection systems for hydraulic services in wide span and high-rise buildings. The fire protection systems ensure that hydraulic services maintain integrity, insulation and structural adequacy in case of fire.

It involves interpretation of plans and specifications and the design, detailing and documentation of fire-compliant hydraulic services for applications including residential, commercial and industrial and may be for new projects or an existing structure being renovated, extended, restored or maintained.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate design

1.1 Evaluate fire and non-fire-rated compartments of buildings and specify the application of evaluation to

- parameters.
- hydraulic services.
- 1.2 Determine design requirements from plans, specifications and client brief.
 - 1.3 Conduct cost-benefit analysis, comparing a range of pipe materials, system designs and penetration protection systems.
 - 1.4 Interpret and apply statutory, regulatory, Australian and New Zealand standards and relevant building code requirements for the design of fire-compliant hydraulic services.
 - 1.5 Interpret and apply manufacturer requirements and trade and technical manuals.
 - 1.6 Conduct additional research, including a desktop study, and establish performance requirements.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems and type and location of fire check materials.
 - 2.2 Specific approved fire-rated materials, penetration techniques, insulation and filler materials to appropriate fire-resistance level.
 - 2.3 Design pipe fixings for a range of applications.
 - 2.4 Design pipework for sprinklered and non-sprinklered areas for a range of applications.
 - 2.5 Specify installation requirements.
 - 2.6 Conduct compliance inspection in accordance with workplace procedures.
- 3 Design and size systems.
- 3.1 Design fire-compliant hydraulic services for a range of wide span and high-rise building applications.
 - 3.2 Design a range of fire-compliant duct systems using fire-rated building materials.
 - 3.3 Design hydraulic services using non fire-rated materials to comply with building fire ratings.

- 3.4 Design and size fire-compliant hydraulic distribution systems using computer software packages.
 - 3.5 Apply sustainability principles and concepts when preparing for and undertaking work process.
- 4 Prepare documentation.
- 4.1 Prepare and detail plans for a range of fire-compliant hydraulic services.
 - 4.2 Prepare specifications for fire-compliant hydraulic services.
 - 4.3 Prepare compliance report in accordance with workplace procedures.
 - 4.4 Produce operation and maintenance manual in accordance with workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS5010A Design fire-compliant hydraulic services.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS5010 Design fire-compliant hydraulic services

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS5010A Design fire-compliant hydraulic services. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- evaluating and documenting design parameters, including client, regulatory, manufacturer, NCC and Australian and New Zealand standard requirements for a range of fire-compliant hydraulic services
- planning and detailing system components, including:
 - applying sustainability principles and concepts
 - conducting a compliance inspection
 - designing fire-compliant hydraulic systems
 - designing fire-compliant systems for fire-rated materials
 - designing fire-compliant systems for non-fire-rated materials
 - ducts
 - fire check collars
 - insulation and filler materials
 - penetrations
 - preparing a compliance report
 - preparing a specification for fire-compliant hydraulic services
 - preparing an operation and maintenance manual.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- sustainability principles and concepts covering the current and future social, economic and environmental use of resources:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage

- efficient use and recycling of material
- disposing of waste material to ensure minimal environmental impact
- efficient water usage, harvesting and/or disposal
- lifecycle cost-benefit analysis
- consideration of the Green Building Council of Australia rating scheme.
- design requirements:
 - architectural specifications
 - builder specifications
 - design of fire-compliant hydraulic services should ensure that hydraulic services maintain the integrity, insulation and structural adequacy of a building in case of fire
 - owner requirements
 - specialist design applications
- statutory, regulatory, Australian and New Zealand standards and relevant building code requirements:
 - AS/NZS3500 National plumbing and drainage
 - manual of authorisation procedures for plumbing and drainage products (MP52)
 - material and authorisation standards specified by:
 - statutory plumbing authority
 - local authority
 - National Construction Code (NCC)
 - relevant Acts, regulations and local and state government policies
 - relevant fire standards
- manufacturer requirements:
 - material specifications
 - technical and trade manuals
- layout of pipework systems:
 - car park systems
 - concealed pipework
 - duct systems
 - exposed pipework
 - fire-rated pipework
 - non fire-rated pipework
 - sprinklered and non-sprinklered areas
 - should have principles of economy, serviceability, durability and fit for use applied
- fire check materials:
 - fire pillows
 - fire-rated sealants
 - smoke seals
 - range of intumescent collars
- fire-rated materials:

- fittings
- pipework
- valves
- penetration techniques:
 - concrete floors
 - fire and smoke doors
 - fire dampers
 - galvanised decking systems
 - ply formwork systems
 - post and pre-tensioned concrete flooring systems
 - pre-cast flooring systems
- insulation and fill materials:
 - caulking compounds
 - fibreglass
 - fire pillows
 - foams
 - proprietary fill materials
 - rock wool
- fire-resistance level:
 - insulation
 - integrity
 - structural adequacy
- pipe fixings may include fire and load-rated:
 - bedding and thrust blocks
 - corrosion protection
 - cover
 - masonry fixing
 - material requirements
 - pipe supports spacings and locations
 - vertical support fixing
- installation requirements may include:
 - corrosion and element protection
 - installation details
 - jointing requirements
 - supports
 - workmanship and quality control
- compliance inspection:
 - approved materials appropriate to fire-rated compartments and required fire-resistance level are used
 - clipping and insulation comply with regulatory requirements

- fire compartments are not compromised by hydraulic services
- installation is appropriate for the fire-resistance level
- fire-compliant duct systems:
 - brick
 - concrete
 - masonry
 - plasterboard
- fire-rated building materials:
 - brick
 - concrete
 - masonry
 - plasterboard
 - other building materials as applicable.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS5011 Design fire sprinkler systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS5011A Design fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design and size fire sprinkler systems and prepare operational and compliance documentation.

The role may involve interaction with architects, builders, suppliers and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit's requirements are typically carried out by experienced hydraulic design consultants or fire systems designers on a new or existing domestic or residential structure.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------|---|
| 1 Evaluate design parameters. | 1.1 Establish scope of work for design of fire sprinkler systems for wide span and high-rise building projects. |
| | 1.2 Determine design requirements from plans, specifications and client brief. |
| | 1.3 Interpret and apply fire department, statutory, regulatory, Australian and New Zealand standards and relevant |

- building code requirements.
- 1.4 Interpret trade and technical manuals and manufacturer requirements and apply to design.
 - 1.5 Apply sustainability principles and concepts as part of the design process.
 - 1.6 Establish flow and pressure requirements.
 - 1.7 Conduct flow and pressure tests and establish council main flows and pressures.
 - 1.8 Conduct research including a desktop study and establish performance requirements.
 - 1.9 Conduct a cost-benefit analysis to compare a range of pipe materials and system designs.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems including type and location of fittings and valves.
 - 2.2 Detail type, location and requirements for backflow prevention devices and alarm and valve assemblies.
 - 2.3 Calculate pipe sizes, velocities, flows and pressures for a range of applications.
 - 2.4 Specify approved materials, jointing methods and sprinkler heads for fire sprinkler systems.
 - 2.5 Plan and detail smoke alarm systems, booster assemblies, booster relay and jacking pumps.
 - 2.6 Plan pipe fixings for a range of applications.
 - 2.7 Plan and size water storage systems and pump, pump controls and pump room requirements.
 - 2.8 Plan and size test points and associated drainage systems.
 - 2.9 Specify installation requirements.
- 3 Design and size systems.
- 3.1 Design fire sprinkler systems for a range of wide span and high-rise building applications.

- 3.2 Design combined water supply, fire hydrant and hose reel and sprinkler systems for a range of wide span and high-rise building applications.
 - 3.3 Design sprinkler systems for water supplies Grades 1, 2 and 3.
 - 3.4 Design a range of sprinkler system configurations.
 - 3.5 Design and size fire sprinkler systems using computer software packages.
- 4 Prepare documentation.
- 4.1 Prepare and detail plans for a range of fire sprinkler systems.
 - 4.2 Prepare specification for a fire sprinkler system.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS5011A Design fire sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS5011 Design fire sprinkler systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS5011A Design fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- sizing and designing two different categories of fire sprinkler systems for high-rise buildings, including:
 - plan and detail all system component
 - meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- requirements of state regulatory authorities, Australian standards and manufacturer specifications:
 - AS/NZS 2118.1 Automatic fire sprinkler systems - General systems
 - AS/NZS 3500 Plumbing and drainage set
 - AS 2200 Design charts for water supply and sewerage
 - AS 2419 Fire hydrant installations - system design, installation and commissioning
 - material and authorisation standards specified by:
 - National Construction Code (NCC)
 - statutory authorities
 - environmental requirements
 - hazards associated with devices and systems used in the hydraulic sector
 - installation methods used in hydraulic systems
 - other standards, codes or standard operating procedures
- terminology and definitions used in hydraulic design
- quality assurance requirements:
 - Environment Protection Authority (EPA)
 - internal company quality assurance policy and risk management strategy

- International Standards Organisation (ISO)
- nature of materials used and effects of performance under various conditions
- site safety plan
- workplace operations and procedures
- variety of applications of technology principles in design of fire sprinkler, hydrant and hose reel systems for all classes of building
- workplace safety requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpretation of plans and specifications
 - sizing and documenting layout of fire sprinkler systems for applications, including residential, commercial and industrial
- design requirements:
 - architectural specifications
 - builder specifications
 - owner requirements
 - relevant statutory authorities
 - specialist design applications
- cost-benefit analysis including comparison of range of suitable materials and system choices available to enable cost-effective choices to be made without compromising project integrity
- manufacturer requirements:
 - material specifications and standards
 - pump tables
 - sizing tables
 - sprinkler heads and components
 - technical and trade manuals
- flow and pressure tests such as:
 - results of flow and pressure tests conducted by a contractor
 - on-site measurement of flow (l/s) and pressure (kPa)
- desktop study to collect and interpret existing data for design purposes from:
 - architectural and building plans
 - council requirements
 - developer requirements
 - regulatory requirements
 - environmental, social and economic considerations
 - other documents and reports as appropriate
- performance requirements including flow, velocity, pressure and discharge requirements, established using Australian and New Zealand standards and local statutory authorities' plans
- layout of pipework systems:

- appropriate water supply
- grid systems
- ring main
- tree system
- should have principles of economy, serviceability, durability and fit for use applied
- types of fittings:
 - mechanical fittings
 - bends
 - elbows
 - tees
 - unions
- types of valves:
 - backflow prevention
 - pressure relief
 - isolating
 - pressure limiting
 - pressure reduction
 - strainers
 - water-saving devices
- backflow prevention devices, which may be testable or non-testable devices and installed as:
 - individual protection
 - zone protection
 - containment protection
- types of alarm and valve assemblies:
 - wet
 - dry
 - deluge
 - pre-action
 - mechanical and electrical alarms
 - ancillaries and trims
- calculations used to identify:
 - hazard classification
 - hydraulic
 - pressure and flow
 - density of discharge
 - velocity
 - volume
 - friction
 - area of operation (including shapes)

- materials used:
 - chlorinated polyvinyl chloride (CPVC)
 - copper
 - steel
 - fittings and fixtures
 - other approved materials
- jointing methods:
 - silver braze
 - welded
 - solvent welded
 - flanged
 - mechanical joints
 - threaded
 - other approved methods of jointing
- booster assemblies:
 - cabinet and block plans
 - non-return and isolating valves
 - fire appliance (hard stand) access
 - pressure gauges
 - appropriate booster assembly
- fire and load rated pipe fixings:
 - masonry fixing
 - vertical support fixing
 - pipe supports spacings and locations
 - bedding and thrust blocks
 - corrosion protection
 - cover
 - material requirements
- water storage systems considerations:
 - automatic controls
 - inlet valve design and sizing
 - outlet valve design and sizing
 - overflow requirements
 - safe tray requirements
 - tank sizes
 - vortex plates
 - tank siting
- pump, pump controls and pump room requirements:
 - manual and/or automatic controls
 - inlet and outlet design requirements

- installation and mounting requirements
- pump selection
- space requirements
- electrical supply requirements
- valve requirements
- ventilation requirements
- heating
- exhaust extraction
- test points and associated drainage systems:
 - design and sizing of collection points and tundishes to prevent spillage, overflow and damage to building finishes
 - design and sizing of drainage systems to cater for maximum flow conditions
 - specification of materials for systems, including copper, polyvinyl chloride (PVC) and galvanised piping
 - other approved materials
- installation requirements:
 - corrosion and elements protection
 - installation details
 - jointing requirements
 - supports
 - workmanship and quality control
- sprinkler system configurations:
 - deluge
 - drencher
 - dry
 - pre-action
 - special hazard
 - wet
- methods to apply sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage
 - efficient use and recycling of material
 - disposing of waste material to ensure minimal environmental impact
 - efficient water usage, harvesting and/or disposal
 - life cycle cost-benefit analysis
 - consideration of the Green Building Council of Australia rating scheme
- plan inclusions:
 - axonometrics
 - cross-sections

- details
- elevations
- isometrics
- sections
- submission for client approval
- pipework fabrication sheets and stores lists
- service coordination
- schematics produced using:
 - computer generation
 - drawing equipment
- specification inclusions:
 - support and specialised components
 - jointing
 - manufacturer
 - materials
 - valve selection
 - quality control/workmanship
- types of testing:
 - air pressure test
 - hydrostatic test
 - flush system
 - quality assurance (QA) audit
- commissioning schedule inclusions:
 - direct inspection
 - flow test
 - system operation
- operation and maintenance manual inclusions:
 - hydraulic calculations and water supply details
 - as installed drawings
 - relevant standards of maintenance of all maintainable equipment
 - manufacturer data
 - system description and operating instructions
 - certificate reference.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPFS5012 Design fire hydrant and hose reel systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Foundation Skills. Typographical errors corrected in Elements and Performance Criteria 2.1, 2.2, and 2.7.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS5012A Design fire hydrant and hose reel systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design fire hydrant, hose reel and storage systems to Australian and New Zealand standards, the National Construction Code (NCC) and other relevant legislative requirements in order to meet fire protection standards for a range of wide span and high-rise building applications.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

The design of fire hydrants, hose reels and storage systems must comply with Australian and New Zealand standards, the National Construction Code (NCC) and other relevant legislative requirements in order to meet fire protection standards.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------------------|---|
| 1 Evaluate design parameters. | 1.1 Establish scope of work for fire hydrants, hose reels and distribution systems for wide span and high-rise building projects. |
| | 1.2 Determine design requirements from plans, specifications and client brief. |
| | 1.3 Conduct cost-benefit analysis comparing a range of pipe materials and system designs. |
| | 1.4 Interpret manufacturer requirements and trade, technical and sizing manuals for the design parameters. |
| | 1.5 Conduct research to outline design parameters. |
| | 1.6 Conduct flow and pressure tests. |
| | 1.7 Establish performance requirements. |
| 2 Plan and detail system components. | 2.1 Plan layout of pipework and type and location of fittings and valves. |
| | 2.2 Detail type, location and requirements for backflow prevention devices. |
| | 2.3 Calculate pipe sizes, velocities, flows and pressures for a range of applications. |
| | 2.4 Specify approved materials, jointing methods and installation requirements. |
| | 2.5 Detail hydrant booster, standpipe and hose reel assemblies. |
| | 2.6 Design thrust blocks and pipe fixings for a range of applications. |
| | 2.7 Size and detail pump, pump controls and pump room requirements. |
| | 2.8 Design and detailed water storage systems. |

- | | | | |
|---|--------------------------|-----|---|
| 3 | Design and size systems. | 3.1 | Design fire hydrant and hose reel systems for a range of wide span and high-rise building applications. |
| | | 3.2 | Design combined water supply, fire hydrant, hose reel and sprinkler systems for a range of wide span and high-rise building applications. |
| | | 3.3 | Design a range of delivery systems. |
| | | 3.4 | Design and size Fire hydrant and hose reel systems using computer software packages. |
| | | 3.5 | Apply sustainability principles and concepts when preparing for and undertaking work process. |
| 4 | Prepare documentation. | 4.1 | Prepare plans for a range of fire hydrant and hose reel systems. |
| | | 4.2 | Prepare block plan booster cabinet according to Australian and New Zealand standards. |
| | | 4.3 | Prepare specification for a fire hydrant and hose reel system. |
| | | 4.4 | Prepare testing and commissioning schedule. |
| | | 4.5 | Produce operation and maintenance manual. |

Foundation Skills

A person demonstrating competency in this unit must have the following language, literacy, numeracy and employment skills:

- problem-solving skills to:
 - analyse requirements
 - carry out tests
 - consider options
 - design an appropriate system
 - identify typical faults and action required to rectify problems
- technology skills to:
 - access and understand site-specific instructions in a variety of media
 - use mobile communication technology.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS5012A Design fire hydrant and hose reel systems.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS5012 Design fire hydrant and hose reel systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Foundation Skills. Typographical errors corrected in Elements and Performance Criteria 2.1, 2.2, and 2.7.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS5012A Design fire hydrant and hose reel systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- establishing and evaluating design parameters for a range of fire hydrant and hose reel systems
- planning system components for a range of fire hydrant and hose reel systems:
 - application of sustainability principles and concepts
 - booster assemblies
 - hose reels
 - hydrants
 - storage tanks
 - thrust blocks
- complying with WHS regulations applicable to workplace operations
- applying organisational quality procedures and processes within context of restoring plastered surfaces to conservation requirements
- designing and sizing a range of fire hydrant and hose reel systems
- developing a checklist with all information and formulas required to carry out flow and pressure tests
- preparing plans for a range of fire hydrant and hose reel systems
- preparing a specification for a fire hydrant and hose reel system
- preparing a testing and commissioning schedule
- producing an operation and maintenance manual
- communicating with others to ensure safe and effective work site operations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian and New Zealand standards:
 - AS/NZS3500 National plumbing and drainage: Part 1
 - AS2419 Fire hydrant installations system design, installation and commission
 - AS2441 Installation of fire hose reels
 - AS/NZS2118 Automatic fire sprinkler systems general requirements
 - NCC
- fire department, statutory and regulatory requirements and Australian and New Zealand standards for the design of fire hydrants, hose reels and distribution systems
- flow and pressure:
 - results of flow and pressure tests
 - on-site measurement of flow (l/s), velocity (m/s) and pressure (kPa)
- performance requirements:
 - flow, velocity, pressure and discharge requirements, established using Australian and New Zealand standards and local statutory authority's plans
- layout of pipework:
 - dual feed
 - ring main
 - single pipe
- fittings and valves:
 - fittings:
 - mechanical fittings
 - bends
 - elbows
 - tees
 - unions
 - valves:
 - backflow prevention
 - pressure relief
 - isolating
 - pressure limiting
 - pressure reduction
 - materials:
 - copper
 - galvanised steel
 - fittings and fixtures
 - other approved materials
- jointing methods:

- flanged
- mechanical joints
- silver braze
- threaded
- welded
- other approved methods of jointing
- installation requirements:
 - corrosion and elements protection
 - installation details
 - jointing requirements
 - supports
 - workmanship and quality control
- booster and standpipe assemblies:
 - cabinet and block plans
 - non-return and isolating valves
 - fire appliance (hard stand) access
 - pressure gauges
 - suction and delivery outlets
 - testing points
 - signage
- hose reel assemblies:
 - Australian standards' requirements for clearances and requirements
 - non-return and backflow prevention valves
 - pipe sizes
- design elements of thrust blocks:
 - designed and installed to AS/NZS3500
 - design details for tees, elbows and valves
 - keying and anchorage points
 - sizes
 - soil characteristics
 - velocity and flow forces to be resisted
- pipe fixings:
 - bedding and thrust blocks
 - corrosion protection
 - covers
 - masonry fixing
 - material requirements
 - pipe supports spacings and locations
 - vertical support fixing
- pump, pump controls and pump room requirements:

- electrical supply requirements
- heating
- inlet and outlet design requirements
- installation and mounting requirements
- manual and automatic controls
- pump selection
- space requirements
- valve requirements
- ventilation requirements
- water storage systems:
 - inlet valve design and sizing
 - outlet valve design and sizing
 - overflow requirements
 - safe tray requirements
 - tank sizes
 - vortex plates
- delivery systems:
 - gravity feed
 - mains pressure
 - pump supply
- sustainability principles and concepts:
 - cover the current and future social, economic and environmental use of resources:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage
 - efficient use and recycling of material
 - disposing of waste material to ensure minimal environmental impact
 - efficient water usage, harvesting and/or disposal
 - life cycle cost-benefit analysis
 - consideration of the Green Building Council of Australia rating scheme.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3046 Install LPG systems in caravans, mobile homes and mobile workplaces

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS3046A Install LPG systems in caravans, mobile homes and mobile workplaces. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and commission liquefied petroleum gas (LPG) systems in caravans, mobile homes and mobile workplaces.

It includes identifying LPG system requirements, installing of LPG system including flue and ventilation, and testing and commissioning LPG systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------------|---|
| 1 Identify LPG system requirements. | 1.1 Access, read and determine LPG system installation requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental |

requirements.

- | | | | |
|---|--|-----|--|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select appropriate tools and equipment including personal protective equipment (PPE). |
| | | 2.3 | Calculate pipe sizing and ventilation requirements. |
| 3 | Install, test and commission LPG system, including flue and ventilation. | 3.1 | Perform installation of cylinders, regulators, associated pipework, appliances and ventilation, complying relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | | 3.2 | Select appropriate equipment to conduct testing. |
| | | 3.3 | Perform test and commission system according to relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | | 3.4 | Affix compliance plates and signage according relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | | 3.5 | Complete documentation according to regulatory requirements and/or workplace procedures. |
| 4 | Clean up. | 4.1 | Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3046A Install LPG systems in caravans, mobile homes and mobile workplaces.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3046 Install LPG systems in caravans, mobile homes and mobile workplaces

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS3046A Install LPG systems in caravans, mobile homes and mobile workplaces. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing, testing and commissioning a liquefied petroleum gas (LPG) system, including two type A gas appliances, in either a caravan, mobile home or mobile workplace.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- pipe sizing and ventilation requirements
- installation requirements for ventilation, appliances, LPG cylinder, regulators, piping materials and jointing techniques
- how to access relevant information, including job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
- tools and equipment used for the installation and commissioning of LPG systems in caravans, mobile homes and mobile workplaces
- work health and safety (WHS) requirements for the installation and commissioning of LPG systems in caravans, mobile homes and mobile workplaces
- properties of gas, gas safety, combustion principles, pressure and flow rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3047 Install LPG systems in marine craft

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS3047A Install LPG systems in marine craft. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and commission gas detection systems and liquefied petroleum gas (LPG) systems with an operating pressure not exceeding 3.0 kPa in marine craft.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Identify LPG installation requirements in a marine craft. | 1.1 Access, read and determine LPG system installation requirements from relevant Job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |
| 2 Prepare for work. | 2.1 Create a materials list and collect materials. |

- | | | |
|---|---|--|
| | 2.2 | Select appropriate tools and equipment, including personal protective equipment (PPE). |
| | 2.3 | Calculate pipe size and ventilation requirements. |
| 3 | Install LPG system, including flue and ventilation. | |
| | 3.1 | Perform installation of cylinders, regulators, associated pipework, appliances and fixings. |
| | 3.2 | Perform installation of a gas detection system according to relevant Job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| 4 | Test and commission LPG and detection systems. | |
| | 4.1 | Select appropriate equipment to conduct testing. |
| | 4.2 | Perform test and commissioning of system according to relevant Job plans and specifications codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 4.3 | Affix compliance plates and signage according to relevant codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 4.4 | Complete documentation according to regulatory requirements and/or workplace procedures. |
| 5 | Clean up. | |
| | 5.1 | Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. |
| | 5.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3047A Install LPG systems in marine craft.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3047 Install LPG systems in marine craft

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS3047A Install LPG systems in marine craft. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing, testing and commissioning liquefied petroleum gas (LPG) and gas-detection systems including installing pipework, connecting a type A gas appliance in a marine craft, including determining the gas load, storage capacity and ventilation requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- pipe size and ventilation requirements
- installation requirements for ventilation, appliances, LPG cylinder, regulators and piping
- how to access relevant information, including relevant Job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements
- properties of gas, gas safety, combustion principles, gas pressures and detection systems
- tools, materials and equipment used for the installation and commissioning of gas detection systems and LPG systems in marine craft
- work health and safety (WHS) requirements for the installation and commissioning of gas detection systems and LPG systems in marine craft.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3048 Install gas pressure control equipment

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCPGS3048A Install gas pressure control equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and commission gas control and regulating equipment for consumer piping carrying natural gas (NG) or liquefied petroleum gas (LPG) up to 200 kPa.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify installation requirements.	1.1 Access, read and determine gas pressure control equipment installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.

- | | | | |
|---|-----------------------------------|-----|---|
| 2 | Prepare for work. | 2.1 | Identify potential hazards and determine and implement control measures. |
| | | 2.2 | Create a materials list and collect materials. |
| | | 2.3 | Select appropriate tools and equipment including personal protective equipment (PPE). |
| 3 | Install and commission equipment. | 3.1 | Perform installation of pipework, fittings and gas pressure control equipment. |
| | | 3.2 | Test, purge and commission system. |
| | | 3.3 | Adjust gas pressure. |
| | | 3.4 | Complete documentation according to regulatory requirements. |
| 4 | Clean up. | 4.1 | Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3048A Install gas pressure control equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3048 Install gas pressure control equipment

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCPGS3048A Install gas pressure control equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing one single and one two-stage system connecting to an appliance that includes an internal relief and over-pressure shut off valve.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- how to access relevant information, including codes and standards
- tools, materials and equipment used for the installation and commissioning of gas control and regulating equipment
- work health and safety (WHS) requirements for the installation and commissioning of gas control and regulating equipment
- properties of gas, gas safety, combustion principles, pressure and flow rates.
- processes, procedures and techniques for installing, testing and commissioning gas pressure control equipment
- installation and ventilation requirements of over-pressure regulators, including internal relief and over-pressure shut off (OPSO) valves.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3049 Install gas appliance flues

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPGS3049A Install Type A gas appliance flues. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and test flues for gas appliances in accordance with relevant regulatory authority and jurisdictional requirements.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3021 Flash penetrations through roofs and walls

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---|-------------------------------------|-----|---|
| 1 | Identify installation requirements. | 1.1 | Access, read and determine flue installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional |
|---|-------------------------------------|-----|---|

- requirements.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment, including personal protective equipment (PPE).
- 3 Install and test flue.
 - 3.1 Set out and install flue, supports, components and weatherproofing according to job specifications and complying with relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.
 - 3.2 Test flue for operation and adjust as required.
 - 3.3 Complete documentation according to regulatory requirements and workplace procedures.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3049A Install Type A gas appliance flues.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3049 Install gas appliance flues

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPGS3049A Install Type A gas appliance flues. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by

- installing, testing and flashing as required:
 - a fan-assisted flue
 - a natural draft flue
 - a mild steel flue from a boiler flue spigot to terminate above the roofline.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- properties of gas, gas safety, combustion principles, pressure and flow rates
- types of approved flues for appliances, including:
 - balanced
 - individual appliance
 - multiple flues
 - natural draft
 - twin wall flues
- how to access relevant information, including codes and standards
- tools, materials and equipment used for the installation and testing of gas appliance flues
- work health and safety (WHS) requirements for the installation and testing of gas appliance flues.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3051 Purge consumer piping

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS3051A Purge consumer piping.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to purge consumer gas piping systems greater than 0.03 cubic metres (30 L in volume).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------------|--|
| 1 Identify purge requirements. | 1.1 Access, read and determine requirements for consumer piping requirements from relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply organisational work health and safety (WHS) and environmental requirements. |
| 2 Prepare for work. | 2.1 Identify potential hazards and determine and implement control measures including electrical safety. |

- 2.2 Calculate and record volume of the piping system.
 - 2.3 Select medium and method for purging a consumer piping system.
 - 2.4 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Carry out and test purge operation.
 - 3.1 Perform purge in accordance with relevant codes, Australian standards and jurisdictional requirements.
 - 3.2 Complete documentation according to regulatory requirements and/or workplace procedure.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3051A Purge consumer piping.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3051 Purge consumer piping

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS3051A Purge consumer piping.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- undertaking purge operations for a consumer gas piping system of greater than 0.03 cubic metres (30 L in volume) which includes a subsidiary meter including:
 - one fuel gas purge
 - one inert gas purge.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics of gases used in the purging process, including:
 - inert gas
 - fuel gas
- electrical safety and required precautions
- procedures for purging gas piping systems, including isolation processes and procedures
- properties of gas, gas safety, combustion and ignition principles, purge pressure and flow rates
- tools, materials and equipment used to purge consumer piping:
 - purge stack
 - gas detector
 - purge bucket
- safe work practices associated with purging consumer piping systems
- how to access relevant information, including Job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements
- work health and safety (WHS) requirements for purging consumer gas piping systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3052 Maintain Type A gas appliances

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 3.4.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPGS3052A Maintain Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to perform maintenance on certified Type A appliances. It includes appliances operating on natural gas (NG) or liquefied petroleum gas (LPG).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPGS3054 Calculate and install natural ventilation for Type A gas appliances

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|----------------------------|--|
| 1 Identify LPG maintenance | 1.1 Access, read and determine Type A gas appliance maintenance requirements from job specifications, relevant Australian Standards, codes, manufacturer's |
|----------------------------|--|

- requirements. specifications and jurisdictional requirements.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment, including personal protective equipment (PPE).
- 3 Conduct maintenance.
 - 3.1 Isolate appliance from services and carry out maintenance tasks.
 - 3.2 Test service connections to appliance.
 - 3.3 Commission appliance back into service.
 - 3.4 Identify and report faults or malfunctions unable to be rectified through basic maintenance.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3052A Maintain Type A gas appliances.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3052 Maintain Type A gas appliances

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Elements and Performance Criteria 3.4.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS3052A Maintain Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- maintaining two different certified Type A gas appliances, including:
 - cleaning and routine basic adjustment
 - checking gas supply pressures
 - inspecting flue for operation and condition
- conducting at least one carbon monoxide test
- correctly and safely applying the maintenance process.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- scope of work relating to certified Type A gas appliance maintenance
- processes, procedures and techniques for:
 - maintaining certified Type A appliances, including:
 - checking for adequate gas pressure
 - cleaning and adjusting gas components such as:
 - burners
 - pilots
 - regulators
 - fans
 - temperature and pressure relief (TPR) valves
- properties of gas, gas safety, combustion principles and pressure and flow rates including carbon monoxide testing

- electrical safety and requisite precautions
- how to access relevant information, including codes and standards
- tools, materials and equipment used for the maintenance on Type A appliances
- work health and safety (WHS) requirements for the maintenance on Type A appliances.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3053 Disconnect and reconnect Type A gas appliances

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Removed reference to ‘power supply’ in Knowledge Evidence, duplicates ‘electrical supply including direct wired appliances’ already noted in Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPGS3053A Disconnect and reconnect Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to disconnect and reconnect Type A gas appliances operating on natural gas (NG) or liquefied petroleum gas (LPG). The work is confined to disconnecting and reconnecting the appliance.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Identify disconnect and reconnect requirements. | 1.1 Access, read and determine disconnect and reconnect requirements from relevant Job plans and specifications, codes, Australian standards, manufacturer’s specifications and jurisdictional requirements. |
|---|--|

- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
- 2 Prepare for the work.
 - 2.1 Select appropriate tools and equipment, including personal protective equipment (PPE).
 - 2.2 Locate isolation point(s).
- 3 Disconnect and reconnect appliance.
 - 3.1 Isolate services.
 - 3.2 Carry out an electrical safety check and apply electrical safety procedures.
 - 3.3 Disconnect and remove appliance.
 - 3.4 Reconnect appliance to existing services.
 - 3.5 Check for leaks and commission appliance.
 - 3.6 Complete documentation according to regulatory requirements and/or workplace procedures.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3053A Disconnect and reconnect Type A gas appliances.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3053 Disconnect and reconnect Type A gas appliances

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- Removed reference to 'power supply' in Knowledge Evidence, duplicates 'electrical supply including direct wired appliances' already noted in Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS3053A Disconnect and reconnect Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- isolating, disconnecting and reconnecting two different Type A gas appliances.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- processes, procedures and techniques for:
 - isolation, disconnection and reconnection of Type A appliances
 - electrical safety requirements
 - electrical supply including direct wired appliances
 - gas supply
 - disconnection and reconnection requirements of water supply, flues, and ductwork
- how to access relevant information, including Job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements tools, materials and equipment used for the disconnection, reconnection and commissioning of Type A gas appliances
- work health and safety (WHS) requirements for the disconnection, reconnection and commissioning of Type A gas appliances
- properties of gas, gas safety, combustion principles, pressure and flow rates
- documentation relevant to Type A gas appliances disconnection and reconnection.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3054 Calculate and install natural ventilation for Type A gas appliances

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS3054A Calculate and install natural ventilation for Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to calculate and install natural ventilation for certified Type A gas appliances.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|--|
| 1 Identify natural ventilation requirements. | 1.1 Access, read and determine ventilation installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |
| | 1.3 Identify potential hazards and determine and implement |

control measures.

- | | | | |
|---|---|-----|---|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select appropriate tools and equipment including personal protective equipment (PPE). |
| | | 2.3 | Determine gas load and determine path of air supply. |
| | | 2.4 | Calculate free ventilation area and ventilation openings. |
| 3 | Install ventilation and test appliance. | 3.1 | Install ventilation without damage to the building structure, surrounding environment or other services. |
| | | 3.2 | Test ventilation operations according to job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. |
| 4 | Clean up. | 4.1 | Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3054A Calculate and install natural ventilation for Type A gas appliances.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3054 Calculate and install natural ventilation for Type A gas appliances

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS3054A Calculate and install natural ventilation for Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- calculating natural ventilation for a minimum of three different installations including one pre-standard adoption and one post-standard adoption
- calculating natural ventilation for one flue-less installation where jurisdictional requirements allow
- installing one natural ventilation system for a Type A appliance.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- terminology relating to natural ventilation for gas appliances
- processes, procedures and techniques for:
 - calculating and installing natural ventilation to a variety of gas appliances
 - using measurements and formulas to calculate free ventilation and ventilation openings
- organisational policies and procedures on how to access relevant information, including codes and standards
- tools, materials and equipment used to install natural ventilation for Type A gas appliances
- work health and safety (WHS) requirements to install natural ventilation for Type A gas appliances
- properties of gas, gas safety, combustion principles, pressure and flow rates
- consumer safety requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3055 Install gas sub-meters

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS3055A Install gas sub-meters.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install gas sub-meters for gas consumer piping systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.	1.1	Access, read and determine gas sub-meters installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.
	1.2	Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
	1.3	Determine gas load requirements, size and select gas meter.

- 1.4 Identify gas sub-meter location requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Install gas sub-meter.
 - 3.1 Install and connect sub-meter.
 - 3.2 Test and purge installation.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of any materials in accordance with state and territory legislation and workplace procedures.
 - 4.2 Clean, check for serviceability and store and secure plant, equipment and tools, reporting any damage to appropriate personnel.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3055A Install gas sub-meters.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3055 Install gas sub-meters

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS3055A Install gas sub-meters.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing, connecting and commissioning a gas sub-meter.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- how to access relevant information, including codes and standards
- tools, materials and equipment used to install gas sub-meters
- work health and safety (WHS) requirements
- properties of gas, gas safety, combustion principles, pressure and flow rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3056 Size and install consumer gas piping systems

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Included PC 2.3, 'Select appropriate tools and equipment including personal protective equipment (PPE)'.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Application.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is not equivalent to CPCPGS3056A Install gas piping systems, and CPCPGS3057A Size consumer gas piping systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to size and install consumer gas piping.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|---|
| 1 Identify installation requirements. | 1.1 Access, read and determine consumer gas service installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's |
|---------------------------------------|---|

- specifications and jurisdictional requirements.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Estimate material quantities.
 - 2.2 Create a materials list and collect materials.
 - 2.3 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Size and Install gas piping system.
 - 3.1 Perform sizing of gas piping system.
 - 3.2 Set out and install consumer gas piping system.
 - 3.3 Test gas piping system using appropriate testing equipment.
 - 3.4 Repair any identified leaks and retest.
 - 3.5 Purge gas piping system.
 - 3.6 Complete documentation according to regulatory requirements and workplace procedures.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPGS3056A Install gas piping systems, and CPCPGS3057A Size consumer gas piping systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3056 Size and install consumer gas piping systems

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Included PC 2.3, 'Select appropriate tools and equipment including personal protective equipment (PPE)'.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Application.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is not equivalent to CPCPGS3056A Install gas piping systems, and CPCPGS3057A Size consumer gas piping systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- sizing and installing, in accordance with manufacturers specifications, Australian standards and jurisdictional requirements:
 - one natural gas (NG) consumer piping systems supplying three certified Type A appliances using two different piping systems, one of which must be a composite material
 - one single stage liquid petroleum gas (LPG) consumer piping systems supplying three certified Type A appliances using two different piping systems, one of which must be a composite material.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- pipe sizing including:
 - appliance pressure and gas consumption requirements
 - properties of gas
 - length of run
 - allowable pressure drop

- available pressure
- approved materials, their limitations and application for installing gas piping systems, including:
 - testing for gas-tightness
 - using current testing equipment
- electrical safety and required precautions
- how to access relevant information, including codes and standards
- tools, materials and equipment used to size and install consumer gas piping
- work health and safety (WHS) requirements to size and install consumer gas piping
- properties of gas, gas safety, combustion principles, pressure and flow rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3059 Install LPG storage of aggregate storage capacity up to 500 litres

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS3059A Install LPG storage of aggregate storage capacity up to 500 litres. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to select, install and test liquefied petroleum gas (LPG) storage facilities with a capacity up to 500 litres.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|---|
| 1 Identify installation requirements. | 1.1 Access, read and determine LPG storage requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment, including personal protective equipment (PPE).
 - 2.3 Select the location of LPG cylinders from relevant job plans and specifications, codes, relevant Australian standards, manufacturer's specifications and jurisdictional requirements.

- 3 Install LPG storage system.
 - 3.1 Install cylinders, pipework and appliance(s) to the requirements of relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.2 Test and purge installation.
 - 3.3 Commission installation.
 - 3.4 Affix compliance plates and signage according to job plans and specifications, codes, relevant Australian standards, manufacturer's specifications and jurisdictional requirements.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3059A Install LPG storage of aggregate storage capacity up to 500 litres.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3059 Install LPG storage of aggregate storage capacity up to 500 litres

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS3059A Install LPG storage of aggregate storage capacity up to 500 litres. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing a liquid petroleum gas (LPG) cylinder installation up to 500 litres capacity including:
 - a minimum of two 108 litre (45 kg) capacity LPG cylinders
 - a Type A gas appliance.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- terminology relating to installing LPG storage installations
- characteristics, application and limitations of approved materials and components
- sizing cylinder requirements, including total megajoule (MJ) load and cylinder vaporisation rates
- installation requirements for ventilation, venting, LPG cylinders, regulators and piping
- commissioning LPG regulators, including lockup and flowing pressures
- how to access relevant information, including relevant Job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used to select, install and test LPG storage facilities
- work health and safety (WHS) requirements for selecting, installing and testing LPG storage facilities
- properties of gas, gas safety, combustion principles, pressure and flow rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3060 Install LPG storage of aggregate storage capacity exceeding 500 litres and less than 8 kl

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Pre-requisite unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPGS3060A Install LPG storage of aggregate storage capacity exceeding 500 litres and less than 8 KL.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to select, locate and install liquefied petroleum gas (LPG) storage of 500 to 8000 litres aggregate capacity.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------|---|
| 1 Plan the work. | 1.1 Access, read and determine LPG system installation requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedure and |

- work health and safety (WHS) and environmental requirements.
- 1.3 Determine gas load and design requirements.
 - 1.4 Check storage capacity for compliance with relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 1.5 Determine appropriate regulators to meet capacity and load of the system.
 - 1.6 Select the location of LPG cylinders or tank according to relevant job plans and specifications, codes, relevant Australian standards, manufacturer's specifications and jurisdictional requirements.
- 2 Prepare for work.
- 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment, including personal protective equipment (PPE).
 - 2.3 Select appropriate testing equipment.
 - 2.4 Prepare work area and materials to support installation.
- 3 Install and test LPG storage system.
- 3.1 Install LPG storage container/s, piping, fittings and components in compliance with relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.2 Install regulators and associated pipework, in compliance with relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.
 - 3.3 Test and purge installation.
 - 3.4 Commission installation, including checking regulator working and lockup pressure.
 - 3.5 Complete documentation according to installation requirements and/or workplace procedures.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3060A Install LPG storage of aggregate storage capacity exceeding 500 litres and less than 8 KL.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3060 Install LPG storage of aggregate storage capacity exceeding 500 litres and less than 8 kl

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Pre-requisite unit.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPGS3060A Install LPG storage of aggregate storage capacity exceeding 500 litres and less than 8 KL.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing a liquefied petroleum gas (LPG) storage facility of capacity greater than 500 litres (but less than 8 kl) to a consumer point of connection, including:
 - a tank or a manifold installation connecting a minimum of three cylinders with a storage capacity greater than 500 litres (but less than 8 kl)
 - installation of a first and second stage regulator
 - testing first and second stage piping installation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- LPG storage requirements
- characteristics, application and limitations of approved materials and components including:
 - vaporisation rates
 - manifold
 - tank/cylinder support(s) and bases
 - approved piping materials
 - approved fitting and fixing materials
 - gas storage containers (500 l – 8 kl)
 - gas regulators

- non-metallic hose assemblies
- processes, procedures and techniques for:
 - installing and connecting LPG supply
 - determining and calculating material quantities
- how to access relevant information, including job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements
- tools, materials and equipment used to install LPG storage
- work health and safety requirements for installing LPG storage
- properties of gas, gas safety, combustion principles, pressure and flow rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS3061 Install and commission Type A gas appliances

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Amended Element 1 as follows: Identify installation requirements for Type A gas appliances.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 1 and 4.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPGS3061A Install and commission Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and commission certified Type A gas appliances.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPGS3054 Calculate and install natural ventilation for Type A gas appliances.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Identify installation requirements for Type A gas appliances.	<p>1.1 Access, read and determine Type A gas appliance installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.</p> <p>1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.</p>
2 Prepare the work.	<p>2.1 Create a materials list and collect materials.</p> <p>2.2 Select appropriate tools and equipment, including personal protective equipment (PPE).</p> <p>2.3 Identify potential hazards and determine and implement control measures.</p>
3 Install and commission appliance.	<p>3.1 Determine ventilation opening and source of air supply.</p> <p>3.2 Set out and install test pipe system according to job specifications and complying with relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.</p> <p>3.3 Install appliance, purge piping and reconnect system to appliance and other services according to job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.</p> <p>3.4 Test, adjust and commission appliance.</p> <p>3.5 Test for leakage or spillage of combustion products into circulating air system.</p> <p>3.6 Conduct an electrical safety check.</p> <p>3.7 Complete documentation according to regulatory requirements and/or workplace procedures.</p>
4 Clean up.	<p>4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory</p>

legislation and workplace policies and procedures.

- 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS3061A Install and commission Type A gas appliances.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS3061 Install and commission Type A gas appliances

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Amended Element 1 as follows: Identify installation requirements for Type A gas appliances.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Elements and Performance Criteria 1 and 4.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPGS3061A Install and commission Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and commissioning three certified Type A gas appliances:
 - one must be a fan assisted flued appliance
 - one must be installed in a domestic setting
 - one must be installed in a commercial setting
- calculating natural ventilation for at least one Type A gas appliance
- conducting a carbon monoxide test.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types of approved flues for Type A appliances, including:
 - balanced
 - individual appliance
 - multiple flues
 - natural draft
 - twin wall flues

- working drawings conventions, symbols and abbreviations
- results of carbon monoxide poisoning and how it can occur
- reasons for testing for carbon monoxide
- consequences of carbon monoxide poisoning:
 - ill health
 - death
- processes, procedures and techniques for:
 - installing and commissioning Type A appliances and ventilation
 - using carbon monoxide testing equipment to check appliance for spillage
- how to access relevant information, including codes and standards
- tools, materials and equipment used for the installation and commissioning of Type A gas appliances
- work health and safety (WHS) requirements for the installation and commissioning of Type A gas appliances
- properties of gas, gas safety, combustion principles, pressure and flow rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS4011 Design and size consumer gas installations

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPGS4011C Design and size consumer gas installation. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design and size consumer gas installation and includes consumer piping, flueing and ventilation.

It covers preparation for the work, determination of gas installation requirements, detailed planning of the layout and completing work.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|--|
| 1 Identify system requirements. | 1.1 Access, read and determine design requirements from plans, specifications, relevant manufacturer's requirements, Australian standards and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |

- 1.3 Select appropriate tools and equipment including personal protective equipment (PPE).
- 2 Design and size system layout.
 - 2.1 Determine quantity, location and type of take-off points and appliances from plans and specifications.
 - 2.2 Produce and size consumer gas installations in accordance with relevant manufacturer's requirements, Australian Standards and jurisdictional requirements.
 - 2.3 Use the proposed design to identify and specify optimal materials required.
 - 2.4 Produce final system layout plans to relevant drawing design standards.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS4011C Design and size consumer gas installation.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS4011 Design and size consumer gas installations

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS4011C Design and size consumer gas installation. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout of four gas installations for:
- a caravan installation
- a marine installation, including the installation of an LPG leak detection system
- a commercial installation, including:
 - a gas hot-water plant incorporating a common flue design
 - a gas range
 - deep fryer
 - salamander grill
- a domestic installation with a minimum of two dwellings with at least three or more Type A gas appliances in each and incorporating subsidiary gas meters

Each installation must include:

- pipe sizing and pressures up to 200 kPa
- at least one natural gas installation
- at least one liquefied petroleum gas (LPG) installation
- a two-stage system
- an over-pressure protection device
- a minimum of two piping materials
- certified Type A gas appliances.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers for documentation
- computer-aided design (CAD) software

- impact of ventilation on design
- types, characteristics, uses and limitations of gas pipe work and consumer piping materials, including joining techniques and systems
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design and size consumer gas installations
- work health and safety (WHS) requirements for designing and sizing consumer gas installations
- properties of gas, gas safety, combustion principles, pressure and megajoule rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS4022 Service Type A gas appliances

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS4022A Service Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to diagnose and repair faults on certified Type A gas appliances.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPGS3053 Disconnect and reconnect Type A gas appliances

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify service requirements.

1.1 Access, read and determine service requirements for Type A gas appliances from job specifications, relevant Australian Standards, codes, manufacturers' specifications and jurisdictional requirements.

1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.

- 1.3 Prepare work area and materials to service the Type A gas appliance.
 - 1.4 Locate gas and electrical isolation points.
 - 1.5 Complete electrical and gas safety checks before commencing servicing work.
- 2 Determine faults associated with gas appliances and recommission.
 - 2.1 Identify potential electrical fault pathways and confirm assembly and disassembly techniques and sequences.
 - 2.2 Complete diagnosis on electrical faults on electrical systems that do not exceed 50 volt (V) alternating current (AC) or 120 V direct current (DC).
 - 2.3 Complete gas diagnosis and select most appropriate corrective action as required.
 - 2.4 Repair, replace and/or make adjustments as required.
 - 2.5 Commission and return to service.
 - 2.6 Analyse flue gases and check ventilation requirements according to Australian Standards and jurisdictional requirements.
 - 2.7 Complete and submit documentation according to installation requirements and workplace procedures.
- 3 Clean up.
 - 3.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 3.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS4022A Service Type A gas appliances

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS4022 Service Type A gas appliances

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPGS4022A Service Type A gas appliances. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- diagnosing and rectifying faults in, and testing and recommissioning, four different faulty Type A appliances, including two electrical faults and two gas faults and with the following components:
 - burners and rail cocks
 - combination controls
 - pilots
 - thermostats and components
 - solenoid valve regulators not exceeding 50 volt (V) alternating current (AC) or 120 V direct current (DC) (ripple free)
 - solenoid valves
 - thermocouples
- conducting evaluative tests on electrical and electronic components not exceeding 50 V AC or 120 V DC (ripple free) to diagnose and remedy faults and malfunctions, including:
 - central processing units
 - printed circuit boards and associated parts
- converting a Type A gas appliance to operate on another gas type.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- basic electrical theory:
 - electrical safety checks
 - characteristics of fuses, circuit breakers, residual current devices and earthing systems
 - ignition systems
 - insulation resistance test
 - isolation procedures

- solenoids
- thermocouples
- thermopiles
- appliance operations
- burners and burner adjustment
- characteristics of conversion from one gas type to another
- ignition systems (pilot, ignition and re-ignition, flame safeguard systems, hot surface ignition)
- gas appliance regulators
- gas appliance thermostats
- gas safety:
 - combustion characteristics and effects
 - isolation procedures
 - operation of flame failure systems used in Type A gas appliances
- correct operation of the flue, including carbon monoxide testing
- how to access relevant information, including codes and standards
- tools, materials and equipment used to service Type A gas appliances
- work health and safety (WHS) requirements for servicing Type A gas appliances
- properties of gas, gas safety, combustion principles, pressure and megajoule rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPGS4023 Install, commission and service Type B gas appliances

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- Updated imported prerequisite unit UEENEEP012A Disconnect/reconnect composite appliances connected to low voltage installation wiring to UEERL0004 Disconnect-reconnect electrical equipment connected to low voltage (LV) installation wiring.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Typographical error corrected in Element and Performance Criteria 6.2.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is not equivalent to CPCPGS4023B Install, commission and service Type B gas appliances. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install, commission and service Type B gas appliances, from the gas isolation valve and electrical isolation switch to the flue spigot on the appliance.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

- CPCPCM2043 Carry out WHS requirements
- UEERL0004 Disconnect-reconnect electrical equipment connected to low voltage (LV) installation wiring.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Obtain authority to undertake work on Type B gas appliances	1.1 Conduct a detailed site inspection to assess, analyse, interpret and confirm design specification.
	1.2 Liaise with designer and gas authorities to clarify and resolve identified design specification matters.
	1.3 Obtain formal authority to proceed with installation and commissioning before commencing work.
2 Prepare for work.	2.1 Access, read and determine installation, commissioning and service requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.
	2.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
	2.3 Conduct gas system and electrical safety checks and isolation procedures and record to manufacturer and other authorities' requirements before commencing work.
	2.4 Select appropriate tools and equipment, including personal protective equipment (PPE).
3 Obtain materials and install Type B gas appliances.	3.1 Identify and obtain gas system components, electrical or electronic components and controls and other required installation materials from the job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.
	3.2 Obtain component specifications and manufacturers' installation and servicing manuals.
	3.3 Perform installation of appliance components, including

- valve trains, burners and associated pipework and flue systems.
- 3.4 Calculate and identify ventilation systems.
- 3.5 Check suitability of electrical components, including terminations and electrical wiring and wiring enclosures.
- 3.6 Visually inspect installations at each stage of work to ensure compliance with specifications and absence of damaged or faulty equipment and materials.
- 4 Commission and test Type B gas appliances.
- 4.1 Select testing and servicing equipment appropriate to the requirement and check and prepare for use.
- 4.2 Conduct gas and electrical safety checks and isolation procedures, including purging, and record as required before testing and commissioning is commenced.
- 4.3 Perform test operational parameters of individual components and adjust to conform to specifications.
- 4.4 Perform test appliance operations with and without fuel and adjust as necessary and record results.
- 4.5 Set air flow rate and gas rate in accordance with relevant standards.
- 4.6 Analyse flue gases according to recognised industry practice.
- 4.7 Perform test operations of critical safety interlocks to ensure they are operational and set points are as per relevant standards.
- 5 Service Type B gas appliances.
- 5.1 Analyse defect reports or operational records to identify the nature and possible cause of faults or out-of-specification performance.
- 5.2 Conduct electrical and gas safety checks and isolation procedures and record before servicing work is commenced.
- 5.3 Read and correctly interpret plans and diagrams to identify potential gas system and electrical fault pathways and locations.

- 5.4 Select and apply appropriate testing techniques, procedures and equipment to diagnose system faults or discrepancies.
 - 5.5 Identify and confirm cause of fault or out-of-specification performance.
 - 5.6 Analyse options for correction and select the most appropriate corrective action.
 - 5.7 Conduct repair, replacement or adjustment according to manufacturer specifications or service manuals.
 - 5.8 Test to ensure critical safety interlocks are operational and set points are as per relevant standard.
 - 5.9 Assess appliance to ensure compliance with relevant standards and manufacturer specifications prior to recommissioning and returning to service.
- 6 Finalise work.
- 6.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 6.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.
 - 6.3 Complete documentation according to workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPGS4023B Install, commission and service Type B gas appliances.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS4023 Install, commission and service Type B gas appliances

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- Updated imported prerequisite unit UEENEEP012A Disconnect/reconnect composite appliances connected to low voltage installation wiring to UEERL0004 Disconnect-reconnect electrical equipment connected to low voltage (LV) installation wiring.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Typographical error corrected in Element and Performance Criteria 6.2.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is not equivalent to CPCPGS4023B Install, commission and service Type B gas appliances. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- planning, installing, commissioning and maintaining one Type B gas appliance.

In doing so the person must:

- complete all work according to approved design specifications, workplace procedures, standards, codes and regulatory and manufacturer requirements within agreed timeframes
- apply safety requirements throughout the work sequence.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant standards:
 - AS 3814 Industrial and commercial gas-fired appliances
 - AS/NZS 5601 Gas installations set
 - AS1375 Industrial fuel fired appliances
 - AS 2593 Boilers - Safety management and supervision systems

- AS/NZS 3000 Electrical installations (known as the Australian/New Zealand Wiring Rules)
- AS/NZS 4836 Safe working on low-voltage electrical installations
- flue gas analysis techniques and processes
- gas terminology and conventional symbols
- gas safety and isolation procedures
- combustion characteristics and effects
- purging requirements, techniques and critical calculation processes
- types, characteristics, uses and limitations of Type B gas appliance components
- ventilation techniques and calculation processes
- workplace and equipment safety requirements
- design specification:
 - air controls
 - combustion air blowers
 - flame safeguards
 - gas pressure regulation
 - gas valve trains
 - manual shut-off valves
 - markings and instructions
 - materials
 - over-pressure protection systems
 - process controls
 - safety shut-off valve systems
- Type B gas appliances:
 - those above 10 megajoules (MJ) for which a certification scheme does not exist
 - gas types:
 - combination fuels
 - liquefied petroleum gas (LPG)
 - natural gas (NG)
 - tempered LPG
 - bio-gas
 - special requirements for design and operation:
 - after burners - process
 - air gas mixing machines and mixing blowers
 - atmosphere generators and special atmospheres
 - direct gas fired air heaters
 - high input gas fired appliances
 - incinerators and generators
 - multi-fuel firing systems
 - ovens - direct fired

- smoke ovens - direct fired
- stationary gas engines and turbines
- steam and heated water boilers
- water heaters
- Type B appliance operation specifications:
 - flame establishment periods
 - interlocks
 - operation of gas appliance and burners
 - operational sequences
 - pre-purging
 - start gas rates
- determination of site suitability for installation
- commissioning procedure for a Type B appliance in accordance with relevant standard
- types of valve trains
- types of burners:
 - atmospheric
 - nozzle mix
 - package
 - pre-mix
- testing and servicing of Type B gas appliances requirements
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install, commission and service Type B gas appliances
- work health and safety (WHS) requirements for installing, commissioning and servicing Type B gas appliances
- properties of gas, gas safety, combustion principles, pressure and flow rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPIG2021 Design domestic urban irrigation systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Application and Elements and Performance Criteria 1.6.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPIG2021A Design domestic urban irrigation systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to prepare basic designs and irrigation drawings for domestic irrigation systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Conduct site survey of proposed irrigation area according to client requirements. |
| | 1.2 Adhere to work health and safety (WHS) and environmental requirements associated with design of domestic irrigation systems throughout the work. |

- 1.3 Identify and adhere to quality assurance requirements according to workplace requirements.
 - 1.4 Plan and sequence tasks in conjunction with others involved in or affected by the work and statutory and regulatory authorities' requirements.
 - 1.5 Select and check tools and equipment for preparing basic irrigation designs and drawings for serviceability.
 - 1.6 Prepare work area to support efficient design of domestic irrigation systems.
- 2 Identify drawing requirements.
 - 2.1 Identify areas requiring irrigation and system design components.
 - 2.2 Obtain information on the soil type, ground slope, contours and prevailing wind.
 - 2.3 Locate and note underground services, buildings, paths and other permanent structures.
 - 2.4 Determine and locate water supply and its influence on design requirements.
 - 2.5 Select appropriate emitters to suit function and design requirements.
- 3 Design irrigation system.
 - 3.1 Draw site plan to include structures, paths and property boundaries.
 - 3.2 Sketch garden areas to include locations of lawns, garden beds, trees, vegetable patches or ferneries.
 - 3.3 Sketch pipe runs and water emitters to design requirements.
 - 3.4 Calculate sizes of pipes using standard data and record information in required format.
 - 3.5 Compile list of materials to include number and type of water emitters, control valves, quantities of pipes, fittings and components.
 - 3.6 Apply sustainability principles and concepts throughout the design process.

- 3.7 Submit drawing and design for approval.
- 4 Clean up.
 - 4.1 Clear work area and dispose of reused or recycled materials according to legislation, regulations, codes of practice and job specification.
 - 4.2 Clean, check, maintain and store tools and equipment according to manufacturer recommendations and workplace procedures.
 - 4.3 Complete documentation according to workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPIG2021A Design domestic urban irrigation systems

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPIG2021 Design domestic urban irrigation systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Application and Elements and Performance Criteria 1.6.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPIG2021A Design domestic urban irrigation systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing and preparing a drawing of the system, incorporating automatic timers and controls, varying sprinkler heads and zones, and indicating the materials required (by number and type), to comply with a site plan and specifications for the irrigation of a 200 square metre garden of lawn, shrubs, trees and flowers.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- processes for accessing information and for calculating material requirements
- properties of water, including pressure and flow rates
- relevant statutory and authority requirements related to drawing and installing irrigation systems
- SI system of measurement
- specifications of the range of irrigation products available
- standards applicable to the installation
- technologies for irrigation measurement and drawings
- various types of irrigation systems, including types of materials and components used
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPIG3021 Set out, install and commission irrigation systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPIG3021A Set out, install and commission irrigation systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to set out, install and commission irrigation systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Prepare for work. | 1.1 Obtain plans and specifications. |
| | 1.2 Adhere to work health and safety (WHS) and environmental requirements associated with setting out, installing and commissioning irrigation systems throughout work. |
| | 1.3 Identify and adhere to quality assurance requirements according to workplace requirements. |
| | 1.4 Plan and sequence tasks in conjunction with others involved in or affected by the work and statutory and |

- regulatory authorities' requirements.
- 1.5 Select and check tools and equipment, including personal protective equipment (PPE), for setting out, installing and commissioning irrigation systems for serviceability.
 - 1.6 Prepare work area to support efficient setting out, installation and commissioning of irrigation systems.
- 2 Identify installation requirements.
- 2.1 Identify irrigation system requirements from plans, specifications and relevant information.
 - 2.2 Locate and identify underground services.
 - 2.3 Check flow rate and water pressure for compliance with plans and specifications.
 - 2.4 Select piping and system components to comply with standards, plans and specifications.
 - 2.5 Identify, order and collect materials and equipment according to workplace procedures.
 - 2.6 Check materials and equipment for compliance with standards, docket and order form, and for acceptable condition.
- 3 Install and commission irrigation system.
- 3.1 Set out irrigation pipes according to plans, specifications and site requirements.
 - 3.2 Excavate pipe trenches according to plans and specifications.
 - 3.3 Install pipe system according to plans, specifications, site requirements, manufacturer recommendations and standards, and sustainability principles and concepts.
 - 3.4 Flush pipelines of air and foreign matter to installation standard.
 - 3.5 Install backflow prevention device according to standards.
 - 3.6 Install and adjust water emitters to produce required spray pattern.

- 3.7 Install, operate and adjust control valves to achieve specified flow rate.
 - 3.8 Test and adjust installation to comply with standards and authorities' requirements.
 - 3.9 Backfill trenches according to plans and specifications and reinstate ground surface.
- 4 Clean up.
- 4.1 Clear work area and dispose of reused or recycled materials according to legislation, regulations, codes of practice and job specification.
 - 4.2 Clean, check, maintain and store tools and equipment according to manufacturer recommendations and workplace procedures.
 - 4.3 Complete documentation according to workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPIG3021A Set out, install and commission irrigation systems

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPIG3021 Set out, install and commission irrigation systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPIG3021A Set out, install and commission irrigation systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- determining the system requirements, setting out, installing and commissioning an irrigation system sourced from an isolating valve to supply four water emitters of varying type and requiring a solenoid valve to comply with given plans and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics and application of different pipes and fittings, including fixing and joining techniques and methods
- job safety analysis (JSA) and safe work method statements (SWMS)
- process of setting out, installing and commissioning irrigation systems
- processes for accessing information and for calculating material requirements
- properties of water, including pressure and flow rates
- protection of drinking water supplies
- relevant statutory and authority requirements related to installing and commissioning irrigation systems
- SI system of measurement
- standards applicable to the installation
- various types of irrigation systems, including types of materials and components used
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPIG3022 Install and commission domestic irrigation pumps

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.
Changes to Knowledge Evidence.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPIG3022A Install and commission domestic irrigation pumps. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and commission domestic irrigation pumps.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Obtain irrigation plans and specifications and inspect site. |
|---------------------|--|

- 1.2 Adhere to work health and safety (WHS) and environmental requirements associated with installing and commissioning domestic irrigation pumps throughout work.
 - 1.3 Identify and adhere to quality assurance requirements according to workplace requirements.
 - 1.4 Plan and sequence tasks in conjunction with others involved in or affected by the work and statutory and regulatory authorities' requirements.
 - 1.5 Select and check tools and equipment, including personal protective equipment (PPE), for installing and commissioning domestic irrigation pumps for serviceability.
 - 1.6 Prepare work area to support efficient installation and commissioning of domestic irrigation pumps.
- 2 Identify installation requirements.
- 2.1 Identify irrigation system requirements from plans, specifications and relevant information.
 - 2.2 Select pump and installation materials according to type, installation, range of flow rates, operating head and delivery distance.
 - 2.3 Identify, order and collect pump, according to workplace procedures.
 - 2.4 Check pump for compliance with standards, docket and order form, and for acceptable condition.
- 3 Install and commission pump.
- 3.1 Set out pump position to comply with irrigation plans and manufacturer recommendations.
 - 3.2 Install pump base according to plans and specifications and sustainability principles and concepts.
 - 3.3 Position and fix pump onto base.
 - 3.4 Connect suction and discharge lines to pump according to manufacturer specifications.
 - 3.5 Pressure test piping according to job specifications.

- 3.6 Test and adjust operation of pump to achieve effective operation according to job and manufacturer specifications.
 - 3.7 Record and document test data in format required by quality assurance procedures.
- 4 Clean up.
- 4.1 Clear work area and dispose of reused or recycled materials according to legislation, regulations, codes of practice and job specification.
 - 4.2 Clean, check, maintain and store tools and equipment according to manufacturer recommendations and workplace procedures.
 - 4.3 Complete documentation according to workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPIG3022A Install and commission domestic irrigation pumps

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPIG3022 Install and commission domestic irrigation pumps

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.3.
Changes to Knowledge Evidence.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPIG3022A Install and commission domestic irrigation pumps. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and commissioning for operation, a centrifugal pump (25 mm suction and 25 mm delivery) to comply with given plans and specifications for a domestic irrigation system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics and application of different pipes and fittings, including:
 - fixing and joining techniques and methods
 - flow rates
- various types of domestic irrigation pumps
- properties of water, including pressure and flow rates
- relevant statutory and authority requirements related to installing and commissioning domestic irrigation pumps
- SI system of measurement
- mechanical, hydraulic and electrical principles
- standards applicable to the installation
- levelling and alignment processes

- process of installing and commissioning domestic irrigation pumps
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS2021 Assemble mechanical services components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS2021A Assemble mechanical services components. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to assemble mechanical services components for heating and cooling systems prior to their installation.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and determine assemble mechanical services components installation requirements from relevant Job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).

- 3 Assemble components.
 - 3.1 Determine and transfer dimensions for fabrication and assembly.
 - 3.2 Interpret relevant standards, codes and symbols.
 - 3.3 Perform calculations to determine job requirements.
 - 3.4 Mark out material in conformance with determined measurements.
 - 3.5 Check dimensions for accuracy and compliance with plans and specifications.
 - 3.6 Identify and apply selected development method to task according to workplace procedures and sustainability principles and concepts.

- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS2021A Assemble mechanical services components.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS2021 Assemble mechanical services components

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPMS2021A Assemble mechanical services components. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- assembling and connecting a heating coil to a boiler and a fan and duct work for a warm air heating system given the plans and specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics of materials used in the required assembly
- classification of assembly types and identification of assembly components
- levelling and alignment processes
- mechanical and hydraulic principles
- operation requirements of equipment used for fabricating and assembling components
- types of fasteners, fixings and sealants
- work health and safety (WHS) regulations relevant to assembly of mechanical services components
- workplace operating procedures, including required standards for assembly
- how to access relevant information, including codes and standards
- tools, materials and equipment used to assemble mechanical services components
- WHS requirements to assemble mechanical services components.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3031 Fabricate and install steel pressure piping

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3031A Fabricate and install steel pressure piping. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to determine installation requirements and to fabricate up to DN50, install and test steel pressure piping.

It applies to pipe systems with operating pressures not exceeding 1750 kPa and 200°C.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.

1.1 Access, read and determine steel pressure pipe installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.

1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.

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| 2 Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | 2.2 | Select and check serviceability of appropriate tools, equipment and personal protective equipment (PPE). |
| 3 Fabricate, install and test pipe system. | 3.1 | Set out pipework configuration. |
| | 3.2 | Perform installation of fixings and supports to manufacturer requirements, job plans, specifications and workplace requirements. |
| | 3.3 | Fabricate and joint pipe system according to job plans, specifications and manufacturer requirements for mechanical type joints. |
| | 3.4 | Perform installation of pipe system in specified location without damage or distortion to pipework or surrounding environment or other services. |
| | 3.5 | Perform testing of pipe system. |
| | 3.6 | Complete documentation according to relevant regulatory requirements and or workplace requirements. |
| 4 Clean up. | 4.1 | Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. |
| | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure according to workplace procedures. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3031A Fabricate and install steel pressure piping.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3031 Fabricate and install steel pressure piping

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3031A Fabricate and install steel pressure piping. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- applying pipe cutting and welding skills by using oxy-acetylene and arc welding equipment for piping up to DN50 and must include:
 - butt welding a pipe joint in DN40 piping in the fixed horizontal position
 - welding DN40 and 50 mild steel branch joints
 - constructing a DN80 header with DN20, 40 and 50 branch joints using the oxy-acetylene method
 - welding 50 mm and 80 mm flanges to mild steel pipe
 - welding blank ends into DN80 mild steel pipe
- fabricating, installing and testing a DN40 steel pipeline from a supply point to an outlet, incorporating two changes of direction with one position butt welded with oxy welding, plus an arc welded flange incorporating a branch for testing purposes
- testing completed task to ensure required pressure and the soundness of all joints within the system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the characteristics and the application of approved materials and components for the fabrication and installation of pressure piping
- processes, procedures and techniques of:
 - installation of steel pressure piping
 - calculating material quantities
- pressure, flow rates, temperature requirements and properties of conveyed materials including:
 - cutting and welding gases
 - mechanical joint systems and fittings with variable diameters up to DN100

- steel pipes
- threaded pipe fittings
- weldable pipe fittings
- how to access relevant information, including codes and standards
- tools, materials and equipment used to fabricate and install steel pressure piping
- work health and safety (WHS) requirements to fabricate and install steel pressure piping.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3032 Select and fit insulation and sheathing

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Application and Typographical errors corrected in Elements and Performance Criteria 3.3.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS3032A Select and fit insulation and sheathing. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install insulating sheathing on hot and cold piping, fittings and vessels. It includes the selection of insulation materials.

Site location for work application may be either domestic or commercial and may be a new work site or an existing structure being renovated, extended, restored or maintained.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Access and read job plans and specifications. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements and sustainability associated with the |

- installation of insulating sheathing.
- 1.3 Apply quality assurance requirements in accordance with workplace requirements.
 - 1.4 Plan and sequence tasks in conjunction with others involved in or affected by the work and statutory and regulatory authorities' requirements.
 - 1.5 Prepare work area to support efficient installation of insulating sheathing.
 - 1.6 Select appropriate tools and equipment including personal protective equipment (PPE) and check for serviceability.
 - 1.7 Identify materials and equipment required to complete the task.
- 2 Identify insulation requirements.
- 2.1 Create a materials list and collect materials.
 - 2.2 Determine fabrication requirements from job plans, specifications and relevant information.
 - 2.3 Calculate quantity and type of materials and components.
- 3 Install insulation.
- 3.1 Clean and prepare surfaces of dirt, rust, scale and grease.
 - 3.2 Install insulating materials, including sheathing, according to plans and specifications.
 - 3.3 Select and install appropriate thermal insulation sheathing to sections of both hot and cold piping, fittings and vessels associated with refrigeration and cooling and heating systems.
 - 3.4 Apply vapour barriers to suit job requirements.
 - 3.5 Apply sustainability principles and concepts throughout the installation.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.

- 4.2 Clean tools and equipment check for serviceability reporting any damage, store and secure.
- 4.3 Complete documentation according to workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3032A Select and fit insulation and sheathing.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3032 Select and fit insulation and sheathing

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Changes to Application and Typographical errors corrected in Elements and Performance Criteria 3.3.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPMS3032A Select and fit insulation and sheathing. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- locating, interpreting and applying relevant information, standards and specifications to selecting, installing, insulating sheathing to piping, fittings and vessels
- given the plans and specifications, insulating two metres of small-bore heating line with at least one change in direction
- applying safety requirements throughout the work sequence, including electrical safety requirements and the use of personal protective equipment (PPE)
- two metres of refrigeration line with metal sheath and at least one change in direction.
-

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- processes of selecting and insulating pipes, fittings and vessels
- techniques for cutting, fabricating and assembling metal sheathing
- techniques for fixing insulating materials to piping
- understanding of fire rating
- processes of installing, insulating and testing ducting
- system types and identification of system components
- how to access relevant information, including codes and standards
- tools, materials and equipment used to select and fit insulation and sheathing
- work health and safety (WHS) requirements to select and fit insulation and sheathing.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3033 Install small bore heating systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Correction to prerequisite unit code from *CPCPCM2043A Carry out WHS requirements* to *CPCPCM2043 Carry out WHS requirements*.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS3033A Install small bore heating systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install small bore hydronic heated water heating systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|---|
| 1 Identify system requirements. | 1.1 Access, read and determine small bore heating installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, |

work health and safety (WHS) and environmental requirements.

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check the serviceability of appropriate tools and equipment including personal protective equipment (PPE).
 - 2.3 Prepare work area to support the efficient installation of small bore heating systems.
- 3 Install small bore heating systems.
 - 3.1 Set out system to comply with plans and specifications.
 - 3.2 Perform installation of fixings and support components.
 - 3.3 Perform installation of joint pipe and heating system.
 - 3.4 Test heating system and record details in the required format.
 - 3.5 Adjust heating system for correct operation and balance, including the setting of nominated temperature and adding appropriate inhibitor.
 - 3.6 Complete documentation according to relevant regulatory requirements and or workplace requirements.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3033A Install small bore heating systems.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3033 Install small bore heating systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- Correction to prerequisite unit code from CPCPCM2043A Carry out WHS requirements to CPCPCM2043 Carry out WHS requirements.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPMS3033A Install small bore heating systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing a two-pipe heating system to two panel radiators, skirting convector or a unit heater, including:
 - using a combination of copper tube and non-metallic piping
 - a minimum of DN20 flow and return with DN15 branches connected to a heating source.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, application and limitations of approved materials and components
- processes, procedures and techniques of:
 - effective isolation heating electrical systems
 - installing and commissioning small bore heating systems:
 - panel radiators
 - skirting convectors
 - boilers and heat exchanges
 - under floor heating systems
- functional and operational features of hand and power tools and equipment including:
 - hand and power tools
 - heating and bending equipment
 - lifting and load shifting equipment

- measuring equipment
- silver brazing equipment
- welding equipment
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install small bore heating systems
- work health and safety (WHS) requirements to install small bore heating systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3034 Install and test medical gas pipeline systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Application and Elements and Performance Criteria 1, 2, 3.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3034A Install medical gas pipeline systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and test medical gas pipeline systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.

1.1 Access, read and determine medical gas pipeline systems installation requirements from relevant plans, job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.

1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental

- requirements.
- 1.3 Determine job priorities and sequence job tasks in consultation with others on site.
- 2 Prepare for work
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check serviceability of appropriate tools and equipment including personal protective equipment (PPE).
- 3 Fabricate, install, purge and test pipeline system.
 - 3.1 Set out pipelines and connection points according to drawings and specifications or job instructions.
 - 3.2 Perform installation and testing of pipework in accordance with relevant codes.
 - 3.3 Perform testing of installed pipework according to standards and manufacturer's specifications.
 - 3.4 Perform purging of pipeline system according to standards and authorities' requirements.
 - 3.5 Access information to complete documentation according to workplace procedures and submit within specified timeframes.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools, plant and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3034A Install medical gas pipeline systems.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3034 Install and test medical gas pipeline systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Changes to Application and Elements and Performance Criteria 1, 2, 3.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3034A Install medical gas pipeline systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and testing three medical gas pipeline systems (each with a different medical gas) from a manifold system to terminal units and fittings ensuring:
 - the inclusion of purged silver brazed joint(s)
 - a minimum of 1.5 metres of approved copper tube per medical gas pipeline incorporating a minimum of two changes of direction using a mechanical bender
 - test and document results are recorded
 - cleanliness and sterility of finished system
 - correct identification of requirements and details of proposed installation
 - correct selection and use of appropriate processes, tools and equipment
 - completion of all work to specifications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- pressure testing procedures and equipment
- processes and requirements of installing, testing and purging medical gas pipeline systems
- types of information on medical gas pipelines systems
- materials for installing medical gas pipeline systems
- types of medical gas and pipelines:
 - medical breathing air
 - medical suction
 - standard oxygen

- components of medical gas pipeline systems:
 - fixtures and labels
 - medical gas pipeline materials and supports
 - terminal units and fittings
- how to access relevant information, including codes, standards and manufacturer's specifications
- tools, materials and equipment used to install and test medical gas pipeline systems
- work health and safety (WHS) requirements to install and test medical gas pipeline systems
- properties of gas, gas safety, combustion principles, pressure and flow rates.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3035 Install and test ducting systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error corrected in Element and Performance Criteria 3.4.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3035A Install and test ducting systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and test ducting systems used for ventilation systems, heating and/or cooling systems, and exhaust systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.	1.1	Access, read and determine install and test ducting systems installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.
	1.2	Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check serviceability of appropriate tools, equipment and personal protective equipment (PPE).
- 3 Install and insulate duct system.
 - 3.1 Set out system to comply with plans and specifications.
 - 3.2 Position duct supports and fixings to comply with plans, job requirements and manufacturer's specifications.
 - 3.3 Install duct work in accordance with plans and specifications.
 - 3.4 Assemble and seal joints in accordance with plans and manufacturer's specifications.
 - 3.5 Install duct system in specified location without damage or distortion to surrounding environment or other services and in accordance with relevant standards.
 - 3.6 Install insulation materials in specified location without damage or distortion to surrounding environment or other services and in accordance with relevant standards.
 - 3.7 Install diffusers and terminal devices in accordance with plans and specifications and job requirements.
- 4 Test duct work.
 - 4.1 Determine test requirements from plans and specifications.
 - 4.2 Select and test duct work under pressure in accordance with instructions and workplace procedures.
 - 4.3 Identify and repair leaks using specified procedures and materials to ensure correct flow operation.
 - 4.4 Complete documentation according to relevant regulatory requirements and or workplace requirements.
- 5 Clean up.
 - 5.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.

- 5.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure according to workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3035A Install and test ducting systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3035 Install and test ducting systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error corrected in Element and Performance Criteria 3.4.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3035A Install and test ducting systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- locating, interpreting and applying relevant information, standards and specifications to install and test small ducting systems
- installing, insulating, testing and balancing ductwork from a fan coiled unit to three outlet grilles given the plans and specifications.

The installation must incorporate hard and flexible duct work, including one transition piece and air control dampers.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- application of flow rates, pressure and volume principles to testing procedures
- characteristics of materials used in the system being tested
- processes of installing, insulating and testing ducting
- system types and identification of system components
- techniques for setting out, assembling, fixing and jointing duct work systems and components, including insulation and acoustic materials
- types of repairs for detected leaks in the duct work system
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install and test ducting systems
- work health and safety (WHS) requirements to install and test ducting systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3036 Install air handling units

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS3036A Install air handling units.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and test air heating, cooling and ventilation plenums or enclosures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and determine install air handling unit installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements. |

- | | | | |
|---|--|-----|---|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select and check serviceability of appropriate tools, equipment and personal protective equipment (PPE). |
| 3 | Set out, assemble and test air handling units. | 3.1 | Set out air handling unit in compliance with plans and specifications. |
| | | 3.2 | Position components and equipment according to plans and specifications. |
| | | 3.3 | Install equipment according to job and manufacturer specifications. |
| | | 3.4 | Check assembly for compliance with plans and specifications. |
| | | 3.5 | Test air handling unit for correct operation. |
| | | 3.6 | Complete documentation according to relevant regulatory requirements and/or workplace requirements. |
| 4 | Clean up. | 4.1 | Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure according to workplace procedures. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3036A Install air handling units.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3036 Install air handling units

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3036A Install air handling units. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- locating, interpreting and applying relevant information, standards and specifications to installing air handling units
- installing a plenum chamber that includes a fan, coil, filter and dampers, including supports and brackets and any fixing requirements, allowing for anti-vibration.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- effects of machinery vibrations on structures, ducts and fittings
- processes of installing and testing air handling unit
- techniques for setting out, assembly and fixing and jointing requirements for duct work systems
- equipment installation techniques that limit the transfer of vibrations from plant and equipment to other component
- testing, balancing and commissioning of air handling units
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install air handling units
- work health and safety (WHS) requirements to install air handling units.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3037 Install and commission a single head split system air conditioning

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Elements and Performance Criteria 3.9 and 3.10 is deleted.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS3037A Install and test split system air conditioning. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and commission a single head split system air conditioning.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and determine a single head split system air conditioning installation and commissioning requirements from relevant plans, job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. |
|---------------------------------------|--|

- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check serviceability of appropriate tools, equipment and personal protective equipment (PPE).
- 3 Install and test system.
 - 3.1 Set out and install indoor and outdoor unit according to drawings and job and manufacturer's specifications.
 - 3.2 Set out pipework and connection points according to drawings and job and manufacturer's specifications.
 - 3.3 Perform testing of installed pipework.
 - 3.4 Remove moisture from pipework.
 - 3.5 Charge pipework.
 - 3.6 Perform installation of condensate drain.
 - 3.7 Perform installation of insulation and casing.
 - 3.8 Perform testing of operation of unit according to relevant standards and manufacturer's specifications.
- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3037A Install and test split system air conditioning.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3037 Install and commission a single head split system air conditioning

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Elements and Performance Criteria 3.9 and 3.10 is deleted.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS3037A Install and test split system air conditioning. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing, testing and commissioning a single-head split system air conditioner.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- electrical safety requirements
- operating principles of air conditioning and refrigeration systems
- processes of installing, testing and commissioning split air conditioning systems
- types of information on split system air conditioning systems, including types of refrigerant gases and their characteristics
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install and commission a single head split system air conditioning
- work health and safety (WHS) requirements to install and commission a single head split system air conditioning.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3038 Install air conditioning control equipment

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error corrected in Element 2.1.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3038A Install air conditioning control equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install air conditioning control equipment for the control of pressure, temperature, flow rate, humidity and density.

Site location for work application may be either domestic or commercial and may be a new work site or an existing structure being renovated, extended, restored or maintained

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for work.

1.1 Access and read job plans and specifications.

1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental

- requirements.
- 1.3 Apply quality assurance requirements in accordance with workplace requirements.
 - 1.4 Plan and sequence tasks in conjunction with others.
 - 1.5 Prepare work area to support efficient installation of air conditioning control equipment.
 - 1.6 Select appropriate tools and equipment including personal protective equipment (PPE) and check for serviceability.
 - 1.7 Identify materials and equipment required to complete the task.
- 2 Identify system requirements.
- 2.1 Create a materials list and collect materials.
 - 2.2 Identify fabrication requirements from job plans, specifications and relevant information.
 - 2.3 Calculate quantity and type of materials and components.
- 3 Install control equipment.
- 3.1 Shut down and isolate air conditioning system according to appropriate codes of practice and WHS requirements.
 - 3.2 Install control equipment to job specification or manufacturer's instructions and report faults, as required.
 - 3.3 Position control equipment in specified location without damage or distortion to surrounding environment or other services.
 - 3.4 Calibrate control equipment according to manufacturer recommendations and job specifications.
 - 3.5 Check correct operation of system control equipment against operational specification.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.

- 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.
- 4.3 Complete documentation according to workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3038A Install air conditioning control equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3038 Install air conditioning control equipment

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Typographical error corrected in Element 2.1.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3038A Install air conditioning control equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- locating, interpreting and applying relevant information, standards and specifications to install conditioning control equipment
- given the plans and specifications, installing a control valve, a thermostat and flow, pressure and limit switches for an air conditioning system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- effective electrical isolation processes and procedures
- operating principles of air conditioning and refrigeration systems
- power and maintenance access requirements for control units
- process of installing and testing air conditioning control equipment
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install air conditioning control equipment
- work health and safety (WHS) requirements to install air conditioning control equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3039 Maintain mechanical services equipment

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Application and Element 2.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS3039A Maintain mechanical services equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to perform general maintenance of heating, ventilating and air conditioning (HVAC) systems and associated mechanical equipment (air distribution systems, hydronic systems and control systems).

Site location for work application may be either domestic or commercial and may be a new work site or an existing structure being renovated, extended, restored or maintained.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Access and read job plans and specifications. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental |

- requirements.
- 1.3 Apply quality assurance requirements in accordance with workplace requirements.
 - 1.4 Plan and sequence tasks in conjunction with others involved in or affected by the work and statutory and regulatory authorities' requirements.
 - 1.5 Prepare work area to support efficient maintenance of mechanical services equipment.
 - 1.6 Select appropriate tools and equipment including personal protective equipment (PPE) and check for serviceability.
 - 1.7 Identify materials and equipment required to complete the task.
- 2 Identify system requirements.
- 2.1 Create a materials list and collect materials.
 - 2.2 Identify fabrication requirements from job plans, specifications and relevant information.
 - 2.3 Calculate quantity and type of materials and components.
- 3 Repair and replace faulty components and test job.
- 3.1 Isolate equipment safely according to regulations and WHS requirements.
 - 3.2 Remove faulty items or components using appropriate tools, equipment and procedures.
 - 3.3 Select replaceable items from manufacturers' catalogue or serviceable items according to manufacturer or site specifications.
 - 3.4 Perform system adjustments to equipment or components to comply with specifications.
 - 3.5 Carry out operational checks on system to ensure its compliance with job specification.
 - 3.6 Document maintenance report in format required by the maintenance specification.

- 4 Clean up.
 - 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.
 - 4.3 Complete documentation according to workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3039A Maintain mechanical services equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3039 Maintain mechanical services equipment

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Application and Element 2.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS3039A Maintain mechanical services equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- maintaining one air distribution systems, including:
 - replacing, realigning and tensioning pulleys and belts as required
 - checking the integrity of mounting and check for excessive vibration and noise
 - checking flexible connections
 - lubricating bearings
 - cleaning filters, coils and blades
 - checking system for leaks
- maintaining one hydronic system, including:
 - replacing gland valves and O rings where required on system
 - replacing and adjusting pump glands
 - checking functionality of and cleaning drain
 - adjusting operating control valves and settings
 - replacing chemical dosing systems when required and checking water system for leaks.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- air conditioning and refrigeration principles
- effect of bacteria in water, and potential impact on health
- operating principles of system components used in mechanical services equipment

- mechanical and hydraulic principles
- processes of maintaining mechanical and hydraulic services equipment
- how to access relevant information, including codes and standards
- tools, materials and equipment used to maintain mechanical services equipment
- work health and safety (WHS) requirements to maintain mechanical services equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3040 Install and commission evaporative air cooling systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3040A Install and maintain evaporative air cooling systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and maintain evaporative air cooling systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM2055 Work safely on roofs

CPCPCM3021 Flash penetrations through roofs and walls

CPCPWT3029 Install water pipe systems

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the work.

1.1 Identify evaporative air cooling system requirements from current approved plans, specifications, standards

- and codes.
- 1.2 Apply quality assurance requirements, work health and safety (WHS) and environmental requirements and sustainability principles for installing evaporative air cooling systems.
 - 1.3 Plan and sequence tasks with others involved in the work.
 - 1.4 Calculate material quantities.
- 2 Prepare the work.
- 2.1 Identify work area preparation requirements.
 - 2.2 Select and check the serviceability of appropriate tools, equipment and personal protective equipment (PPE).
 - 2.3 Receive and check materials for conformity and report any faults or damage.
- 3 Install and commission unit.
- 3.1 Set out for installation and locate existing services and adjust installation process accordingly to avoid any disturbance.
 - 3.2 Carry out preparatory work including installation of piping and isolating valve, roof penetration and flashing without unnecessary damage to surrounding structures or environment.
 - 3.3 Install structural supports, ducting and control panels.
 - 3.4 Test installation and adjust accordingly.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS3040A Install and maintain evaporative air cooling systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3040 Install and commission evaporative air cooling systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS3040A Install and maintain evaporative air cooling systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and commissioning an evaporative air cooling system on a roof including:
 - flashing the roof penetration
 - installing a plenum box and duct work to three diffusers with at least one diffuser positioned three metres from the plenum box, including appropriate duct work support
 - connecting cold water to an isolation valve within one metre of the appliance
 - install drain to approved point of discharge
 - connecting and completing installation testing and commissioning the systems operation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- characteristics and application of approved materials and components
- terminology relating to evaporative air cooling systems
- effect of bacteria in water, and health implications
- processes, procedures and techniques of:
 - effective isolation
 - installing and testing evaporative air cooling systems
 - roof penetration and flashing
 - system of measurement and calculations
- types of evaporative air cooling system materials:
 - control panels
 - diffusers
 - ducting materials
 - evaporative air cooling systems

- grilles
- insulation
- considerations for work site preparation:
 - ensuring structural integrity of roof
 - installing piping and isolating valve
 - installing piping and isolating valve in roof cavity
 - installing plinths
 - installing structural supports
- other services connections to units:
 - electrical connections
 - water supply.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS3041 Install domestic solid fuel burning appliances

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPMS3041A Install domestic solid fuel burning appliances. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install domestic solid fuel burning appliances.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM2055 Work safely on roofs

CPCCWC2001 Complete penetrations and flashings

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Prepare for installation.

1.1 Access, read and determine domestic solid fuel burning appliances requirements from job specifications, relevant Australian Standards, codes, manufacturer`s specifications and jurisdictional requirements.

- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Inspect installation sites and confirm appliance installation locations as suitable or negotiate alternative locations with clients.
 - 1.4 Confirm heat sensitivities of building materials at appliance installation locations and confirm heat protection strategies with clients.
 - 1.5 Select and check the serviceability of the appropriate tools, equipment and personal protective equipment (PPE).
- 2 Install appliance.
- 2.1 Measure and mark appliance location according to compliance requirements.
 - 2.2 Measure, cut or make up floor and wall protection materials and install according to compliance requirements.
 - 2.3 Position appliance and check clearance distances to confirm compliance.
 - 2.4 Install appliance according to compliance and organisational requirements.
- 3 Install flue.
- 3.1 Check flue dimensions and components and obtain additional sections or components as required to meet compliance requirements.
 - 3.2 Calculate, measure, mark and check locations and dimensions of ceiling and roof penetrations according to compliance and organisational requirements.
 - 3.3 Make penetrations to host materials with minimal damage and according to specifications and organisational requirements.
 - 3.4 Install structural supports according to plans and specifications.
 - 3.5 Prepare opening in compliance with specifications,

- manufacturer recommendations and regulations.
- 3.6 Install flue and associated components according to compliance and organisational requirements.
 - 3.7 Apply flashings and sealants to restore integrity of ceilings and roofs according to compliance and organisational requirements.
 - 3.8 Performance test penetration to ensure correct fit of completed installation, and take remedial action as required.
- 4 Finalise installation and clean up.
- 4.1 Install appliance and associated components and check for complete and correct installation and operation according to compliance and organisational requirements.
 - 4.2 Demonstrate operation of appliance to clients and explain factors that affect optimum performance.
 - 4.3 Restore installation site and clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPMS3041A Install domestic solid fuel burning appliances.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS3041 Install domestic solid fuel burning appliances

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPMS3041A Install domestic solid fuel burning appliances. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing at least two different domestic solid fuel burning appliances according to client, compliance, workplace and manufacturer requirements. Appliances may be for:
 - central heating
 - cooking
 - space heating
 - water heating
- a combination of applications, which includes:
 - fireplace inserts
 - free-standing
 - in-built
 - non-tested
- installing flue and associated flashings through a tiled and metal roof system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- factors affecting selection of installation locations for appliances
- factors affecting compliance and non-compliance of domestic solid fuel burning appliances
- factors affecting optimum performance:
 - general cleaning and maintenance requirements
 - type and condition of fuel used in appliances
- heat damage protection requirements for appliances:
 - compliant floor protection
 - compliant clearance distances

- additional shielding
- reduced compliant clearance distances
- legislation, regulations and standards that apply to the installation and emissions of domestic solid fuel burning appliances
- heat-response categories of construction materials:
 - heat sensitive
 - heat tolerant
 - heat resistant
- installation requirements for different types of domestic fuel burning appliances:
 - appliances for:
 - central heating
 - cooking
 - space heating
 - water heating
 - combinations of applications
 - fireplace inserts
 - free-standing
 - in-built
 - non-tested
 - tested
- principles and products of combustion
- requirements and methods for maintaining structural integrity of buildings, roof structures and existing roof coverings
- structure and function of flue elements and principles of flue draw, and effects of:
 - bends and horizontal sections
 - climatic conditions
 - surrounding buildings and trees
- types of domestic solid fuel burning appliances and methods for safe operation
- types and condition of wood used as fuel and impacts on:
 - efficiency of appliances
 - emissions
- compliance requirements:
 - clearance distances to heat sensitive materials:
 - ceilings
 - curtains
 - furniture
 - timbers
 - walls
 - emissions compliance certification plate
 - manufacturer specifications

- types and dimensions of floor protection.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS4011 Design, size and lay out heating and cooling systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS4011B Design, size and lay out heating and cooling systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design, size and document the layout of heating and cooling systems for multi-floor structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify system requirements.

1.1 Access, read and determine heating and cooling installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements.

1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.

1.3 Determine quantity, location, fixtures and legal points of

discharge.

- | | |
|----------------------------------|---|
| 2 Design and size system layout. | 2.1 Review building drawings plans and specifications to determine heating and cooling requirements. |
| | 2.2 Perform sizing of air conditioning or small-bore heating system to provide for required heating and cooling load and to determine required piping and ducting. |
| | 2.3 Produce final system layout plans according to job specifications, relevant Australian Standards, codes, manufacturer's specifications and jurisdictional requirements. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS4011B Design, size and lay out heating and cooling systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS4011 Design, size and lay out heating and cooling systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS4011B Design, size and lay out heating and cooling systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details of a domestic heating and cooling system requiring a minimum heat load of 150 megajoules (MJ) per hour
- designing, sizing and documenting the layout details of a commercial heating and cooling system for a structure with at least four floors.

The performance applies to:

- ducting systems for air conditioning, heating or ventilation purposes in buildings Class 1 or 2 with a maximum static pressure of 0.75 kPa and a maximum velocity of 12.5 metres per second
- piping systems conveying heating and chilled water operating at a maximum pressure of 700 kPa or a maximum temperature of 100°C
- systems having a maximum output of 50 kW and total air quantities not exceeding 950 litres per second.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- principles, operation and characteristics of heating and cooling systems
- characteristics and application of different fixing and joining techniques and methods
- characteristics and application of pipe and ducting systems, including their fittings and fixture supports and fixing and joining techniques
- design concepts and performance measures for heating and cooling systems
- effective isolation processes and procedures
- electrical and electronic principles and safety requirements
- process of designing, sizing and documenting the layout of heating and cooling systems
- properties of water and air, including pressure and flow rates
- air conditioning systems:

- evaporative cooling system
- hydronic heating system
- hydronic cooling system
- warm air system
- refrigerated air conditioning system
- small-bore heating systems:
 - boilers
 - piping
 - radiators
- design materials:
 - use of computers and relevant computer-aided design (CAD) software
 - drafting materials and equipment
 - relevant structure plans and specifications
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design, size and document the layout of heating and cooling systems
 - work health and safety (WHS) requirements for designing, sizing and documenting the layout of heating and cooling systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS4022 Commission air and water systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS4022A Commission air and water systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to test and commission air and water heating and cooling systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Obtain current authorised information, plans and specifications. |
| | 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements and sustainability principles. |
| | 1.3 Select and check the serviceability of appropriate tools, |

- equipment and personal protective equipment (PPE).
- 1.4 Prepare work area to support an efficient testing and commissioning process.
- 2 Determine testing requirements.
 - 2.1 Check equipment performance data against plans, specification requirements and other relevant information.
 - 2.2 Select suitable instruments and associated equipment to measure quantities.
 - 3 Prepare system for balancing.
 - 3.1 Set dampers in the open or specified position and conduct an operational check of system-related fans and ducting according to workplace procedures.
 - 3.2 Energise automatic control devices to provide maximum demand for airflow.
 - 3.3 Check piping system for flow direction and leaks and conduct an operational check of system and related pumps.
 - 3.4 Set all manual and automatic valves in the specified position.
 - 4 Balance, test and commission system.
 - 4.1 Adjust valves or throttling devices to achieve specified water flow ratings.
 - 4.2 Measure air volumes moved by system fans.
 - 4.3 Adjust dampers and terminal devices to achieve specified airflow ratings.
 - 4.4 Set automatic controls and devices to specified settings.
 - 4.5 Test and balance system according to job specification, manufacturer recommendations and sustainability principles and concepts.
 - 4.6 Test and monitor results and document in the format required by job or manufacturer's specification.
 - 4.7 Complete documentation according to workplace

requirements and submit within specified timeframes.

- 5 Restore work area.
 - 5.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.
 - 5.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS4022A Commission air and water systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS4022 Commission air and water systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Knowledge Evidence formatted for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS4022A Commission air and water systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by balancing and commissioning:

- an air conditioning system (up to 150 megajoules) for a domestic installation
- a commercial air conditioning system for a structure of at least four floors
- a hydronic water heating system for a structure of at least four floors.

The performance applies to:

- ducting systems for air conditioning, heating or ventilation purposes in buildings Class 1 or 2 with a maximum static pressure of 0.75 kPa and a maximum velocity of 12.5 metres per second
- piping systems conveying heating and chilled water operating at a maximum pressure of 700 kPa or a maximum temperature of 100°C
- systems having a maximum output of 50 kW and total air quantities not exceeding 950 litres per second.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- application of mechanical, hydraulic, electric and electronic principles and safety requirements
- design concepts, tests and performance standards for measuring various water and air systems
- SI system of measurements
- effect of bacteria in water and potential impact on health
- waste management

- operating principles and characteristics of system components used in water and air systems
- performance standards for balancing systems
- processes of commissioning air and water systems
- relevant statutory authorities:
 - Commonwealth government
 - state and territory governments
 - local authorities
- how to access relevant information, including codes and standards
- tools, materials and equipment used to commission air and water heating and cooling systems
- work health and safety (WHS) requirements for commissioning air and water heating and cooling.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS4023 Design compressed air systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0
- Supersedes and is equivalent to CPCPMS4023A Design compressed air systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design and size compressed air distribution systems and prepare system plans, specifications, testing and commissioning schedules and operation and maintenance manuals.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|--|
| 1 Identify compressed air system requirements. | 1.1 Access and read plans, job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements to determine design and size of compressed air systems. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| | 1.3 Determine quantity, location, fixtures and legal points of discharge. |

- | | |
|----------------------------------|--|
| 2 Design and size system layout. | 2.1 Design and size system layout in accordance with relevant manufacturers' instructions, Australian Standards and jurisdictional requirements. |
| | 2.2 Use the proposed design to identify and specify optimal material requirements. |
| | 2.3 Prepare testing and commissioning schedule. |
| | 2.4 Produce operation and maintenance manual. |
| | 2.5 Identify and analyse noise reduction methods and specify suitable methods. |
| | 2.6 Produce final system layout plans according to relevant drawing design standards. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS4023A Design compressed air systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS4023 Design compressed air systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.0
- Supersedes and is equivalent to CPCPMS4023A Design compressed air systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- evaluating and documenting design parameters including client, Australian Standards, codes, manufacturers' instructions and jurisdictional requirements for at least two (2) compressed air systems.

The design must include evidence of the application of sustainability principles and concepts, manufacturer and regulatory requirements and identification of electrical hazards.

Design, sizing layouts and plans must include:

- industry standard layouts for compressed air systems
- pipe sizes according to regulations and manufacturers' requirements
- specifications for compressed air systems
- testing and commissioning schedules
- operation and maintenance manuals.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- architectural specifications
- builders' specifications
- owner requirements
- specialist use applications
- cost-benefit analysis which compares the range of suitable treatment and disposal options, materials, system choices, disinfection options, water savings and environmental benefits compared to initial and ongoing maintenance costs
- design and performance requirements for compressed air systems
- relevant manufacturers' requirements, Australian Standards and jurisdictional requirements
- job specifications

- system testing
- commissioning schedule requirements
- operation and maintenance manual information
- tools, materials and equipment used to design, size and document the layout of compressed air systems
- work health and safety (WHS) requirements for designing, sizing and documenting the layout of compressed air systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS5010 Design steam generation and distribution systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0

Supersedes and is equivalent to CPCPMS5010A Design steam generation and distribution systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design steam generation and distribution systems, including pipe and valve sizing, material selection, and the preparation and specification of documentation for steam distribution systems for a multi-level building with a minimum of 100 beds, such as a hospital, that incorporates a commercial steam-fed laundry.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires sound understanding of applicable legislation, standards and codes.

This unit is suitable for experienced tradespeople such as hydraulic design consultants or persons in a supervisory capacity in relation to plumbing services.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate design parameters.

1.1 Establish scope of work for steam generation and distribution systems.

- 1.2 Determine design requirements from relevant Australian Standards, codes, plans, specifications, manufacturer requirements and client brief.
 - 1.3 Analyse and apply statutory and regulatory requirements and relevant Australian Standards and codes required for the design.
 - 1.4 Apply sustainability principles and concepts throughout the design process.
 - 1.5 Establish performance requirements, considering safety of system users or building occupants.
 - 1.6 Conduct research to outline design parameters.
 - 1.7 Determine factors that contribute to quality, safety and time efficiency.
 - 1.8 Conduct a cost-benefit analysis comparing a range of pipe materials and system designs.
- 2 Plan, size and detail system components.
- 2.1 Plan layout of pipework systems and type and location of fittings and valves.
 - 2.2 Perform pipe size calculations.
 - 2.3 Design and size steam distribution system using calculations and computer software packages.
 - 2.4 Specify steam appliances, calculate steam consumption and size and specify boilers required.
 - 2.5 Detail steam circuits and specify distribution pressures.
 - 2.6 Specify and detail steam trap types and their operation.
 - 2.7 Specify steam injection systems.
 - 2.8 Specify insulation requirements.
 - 2.9 Plan pipe supports and expansion systems.
 - 2.10 Specify approved materials, jointing methods and installation requirements for steam generation and distribution systems.

- 3 Prepare documentation.
 - 3.1 Prepare plans for steam generation and distribution system.
 - 3.2 Prepare specification for steam generation and distribution system.
 - 3.3 Prepare testing and commissioning schedule.
 - 3.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS5010A Design steam generation and distribution systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS5010 Design steam generation and distribution systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0

Supersedes and is equivalent to CPCPMS5010A Design steam generation and distribution systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting an approved layout for a multi-level building with a minimum of 100 beds, such as a hospital, that incorporates a commercial steam-fed laundry.

The design must:

- meet all regulatory, manufacturer and Australian and New Zealand Standard requirements for steam generation and distribution systems
- incorporate a specification covering all works
- incorporate sustainability principles and concepts.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in design of steam generation and distribution systems for all classes of building
- manufacturer specifications, including hazards identified in relation to devices and systems used
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- principles of technology in the design of steam generation and distribution systems
- terms, including relevant Australian Standard and code definitions, manufacturer terms and naming conventions
- statutory and regulatory requirements and relevant Australian Standards and codes
- plans and specifications, and sizing and documenting layout of steam generation and distribution systems for residential, commercial and industrial applications
- principles and properties of steam systems
- types of steam and steam quality

- sustainability principles and concepts
- cost–benefit analysis of steam designs
- performance requirements, including steam generation and consumption and steam and pressure quality established using relevant Australian Standards, codes and manufacturer information.
- use of steam appliances
- types of steam circuits
- steam trap types and their operation
- types of insulation protection and applications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS5011 Design air conditioning and ventilation systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS5011A Design air conditioning and ventilation systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit applies to individuals responsible for the evaluation and design of air conditioning and ventilation systems.

The unit requires application of technical skills and knowledge to design, size and document details for complex air conditioning and ventilation systems for residential and commercial applications.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

The unit requirements are typically carried out by a consultant or person in a supervisory capacity in relation to plumbing services and hydraulics.

It applies to those who design air conditioning on a new project or an existing structure.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, and regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Evaluate design parameters.
 - 1.1 Clarify and establish scope of work for the design of air conditioning and ventilation systems.
 - 1.2 Determine design requirements using relevant Australian standards, codes, plans, specifications, manufacturer instructions and client briefs, including factors that contribute to quality, safety and time efficiency.
 - 1.3 Apply sustainability principles and concepts throughout the design.
 - 1.4 Evaluate user comfort and specific use conditions to calculate psychrometric evaluation and heat loads.
 - 1.5 Evaluate building heat losses.
 - 1.6 Specify distribution requirements for air conditioning and ventilation system applications.
 - 1.7 Evaluate air conditioning and ventilation systems according to given applications.
 - 1.8 Evaluate and interpret mechanical services drawings.
 - 1.9 Evaluate health risks that may arise due to poor maintenance of air conditioning and ventilation systems.
 - 1.10 Specify minimum performance requirements for several different air conditioning and ventilation systems.
 - 1.11 Evaluate the suitability of manufacturer specifications and technical manuals for a range of design applications.
 - 1.12 Carry out research including a desktop study to outline design parameters.
 - 1.13 Consider the safety of system users or building occupants.
- 2 Plan system components.
 - 2.1 Plan appropriate zoning of air conditioning and ventilation systems to comply with performance objectives.
 - 2.2 Specify air conditioning units for optimum performance.
 - 2.3 Specify fan types for a range of applications.
 - 2.4 Plan air diversion systems, including registers, to ensure

- a balanced system.
- 2.5 Plan ventilation and duct work components and specify locations.
 - 2.6 Specify approved materials for planned design.
 - 2.7 Complete plans and drawings using relevant Australian standards, codes, manufacturer installation requirements and drawing symbols.
- 3 Design and size systems.
- 3.1 Calculate volume of air changes per hour from given floor plans and details.
 - 3.2 Specify methods for eliminating health risks from existing or proposed systems, with reference to relevant authority.
 - 3.3 Design and size air conditioning and ventilation systems for the required applications.
- 4 Prepare documentation.
- 4.1 Prepare client brief for the selected design.
 - 4.2 Prepare plans and specifications for of air conditioning and ventilation systems.
 - 4.3 Develop an appropriate checklist, including the formulas required to carry out an air balance to a given specification.
 - 4.4 Prepare a testing and commissioning schedule.
- 5 Test systems.
- 5.1 Evaluate test procedures for air conditioning and ventilation.
 - 5.2 Conduct tests using appropriate testing equipment, ensuring tests are conducted for air pressure, air velocity, air volume, humidity, pitot tubes, sound power levels and temperature.
 - 5.3 Record test results and prepare a report.
 - 5.4 Design, plan and specify adjustments as required.

5.5 Produce an operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS5011A Design air conditioning and ventilation systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS5011 Design air conditioning and ventilation systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPMS5011A Design air conditioning and ventilation systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details for an air conditioning and ventilation system for a 10-storey residential building with ground floor commercial premises and basement car park and include:
 - air conditioning units
 - ducting systems
 - controls
 - fans
 - zones.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- methods of determining scope of work by:
 - interpreting plans and specifications
 - reviewing sizing and documenting layout for air conditioning and ventilation systems, including residential and commercial systems
 - analysing new projects or an existing structure being renovated, extended, restored or maintained
- design requirements:
 - architectural plans
 - building specifications
 - fire safety
 - the National Construction Code (NCC)
 - owners
 - tenants

- air-flow requirements and sizing of duct work
- specific use conditions:
 - age and activity of occupants
 - computer requirements
 - food preparation
 - smoke exhaust
 - wet-bulb and dry-bulb temperature and humidity
- psychrometric evaluation:
 - absolute, specific and relative humidity
 - air composition
 - air properties:
 - density
 - expansion coefficient
 - kinematic viscosity
 - Prandtl number
 - specific heat
 - temperature
 - thermal conductivity
- altitude, density and volume
- determination of the air condition using a psychrometric or Mollier chart, showing:
 - dewpoint temperature
 - dry-bulb temperature
 - enthalpy
 - humidity ratio
 - relative humidity
 - specific volume
 - wet-bulb temperature
- assessment of factors affecting heat load:
 - building materials
 - insulation
 - number of personnel
 - number of windows
 - room dimensions
 - usage
 - weather effects
 - using:
 - calculations and computer software systems
 - heat load calculation methods and formulas
- building heat losses:
 - construction materials

- insulation materials
- maintaining plenum
- occupancy
- room sizes
- legislation, standards and other relevant documentation according to Commonwealth, state and territory legislation and regulations relating to:
 - growth and distribution of Legionella pneumophila bacteria and other water and airborne infectious bacterial agents
 - handling of materials, including hazardous materials and substances
 - hazard control
 - organic and inorganic contaminants
- quality assurance requirements, including:
 - AS 1100 Technical drawing materials
 - AS/NZS 1668 The use of ventilation and air-conditioning in buildings Set
 - AS/NZS ISO 817:2016 Refrigerants – Designation and safety classification
 - AS/NZS 5149 Refrigerating systems and heat pumps – Safety and environmental requirements - Parts 1 to 4
 - AS/NZS 3666 Air-handling and water systems of buildings microbial control - Parts 1 to 4
 - Environment Protection Authority (EPA)
 - internal company quality assurance policy and risk management strategy
 - International Standards Organisation (ISO)
 - site safety plan
 - workplace operations and procedures
- specification and operational manual information:
 - commissioning and testing
 - components installation
 - fittings
 - manufacturer specifications, literature and data
 - materials
 - pumps
 - systems
 - valves
- specification:
 - air-flow requirements
 - equipment selection
 - fire safety
 - jointing
 - manufacturer requirements
 - materials

- work health and safety (WHS)
- specialised components
- support
- testing
- workmanship
- plans:
 - axonometric
 - cross-sections
 - details
 - elevations
 - isometrics
 - schematics
 - sections
- plans produced by:
 - computer generation
 - drawing equipment
- design and sizing detail:
 - cost
 - materials and quality of work
 - milestones
 - nominated subcontractors
 - provision of on-site facilities and site access
 - quality assurance
 - space allowances
 - standard procedures
 - work schedules
- design parameters:
 - client requirements
 - legislative requirements
 - WHS requirements
 - user requirements in relation to zoning
 - reference to calculations, tables, regulations and manufacturer specifications
- methods of applying sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage
- tests and testing equipment for:
 - air pressure
 - air velocity
 - air volume

- humidity
- pitot tubes
- sound power levels
- temperature
- air flow
- climate control
- defect inspection
- performance quality assurance (QA) audit
- commissioning schedule information:
 - acoustic performance
 - balancing
 - system certification
 - check for foreign material
 - leak check
 - system defects
 - system functions as per design
- operation and maintenance manual information:
 - as installed drawing
 - certification documentation
 - results of commissioning test
 - maintenance schedules
 - manufacturer brochures and technical information
 - regular water quality testing
 - system operation.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS5012 Design sound attenuated hydraulic services

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS5012A Design sound attenuated hydraulic services. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design sound attenuated hydraulic services, determine relevant installation details and prepare specifications for a range of residential, commercial and industrial buildings 29 floors in height or greater.

The unit requires application of technical skills and knowledge to evaluate design requirements, plan and detail system components, design and size systems and prepare operational and compliance documentation.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit is suitable for experienced tradespeople such as hydraulic design consultants or persons in a supervisory capacity in relation to plumbing services who work on new or existing sites.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------------------|---|
| 1 Evaluate design parameters. | 1.1 Establish scope of work for sound attenuated hydraulic services for wide span and high-rise building projects. |
| | 1.2 Determine design requirements from relevant Australian standards, codes, plans, specifications and the client brief. |
| | 1.3 Identify sound transmission categories and levels from relevant acts, codes and standards and evaluate for the relevant premises. |
| | 1.4 Evaluate sound transmission values of building and structural elements and materials. |
| | 1.5 Analyse and apply the National Construction Code (NCC), statutory and regulatory requirements and Australian standards for the design of sound attenuated hydraulic services. |
| | 1.6 Apply sustainability principles and concepts throughout the design process. |
| | 1.7 Establish performance requirements considering safety of system users or building occupants. |
| | 1.8 Interpret manufacturer requirements and trade and technical manuals to comply with design parameters. |
| | 1.9 Conduct research to outline design parameters. |
| | 1.10 Determine factors that contribute to quality, safety and time efficiency. |
| | 1.11 Conduct cost-benefit analysis comparing a range of pipe materials and system designs. |
| 2 Plan and detail system components. | 2.1 Identify and analyse causes of noise generation in hydraulic services. |
| | 2.2 Plan layout of sound-attenuated pipework systems. |
| | 2.3 Perform system calculations for a range of sound attenuated hydraulic services. |

- 2.4 Attenuate sound for pumped hydraulic systems.
 - 2.5 Plan pipe supports for a range of applications.
 - 2.6 Specify approved materials and installation requirements for sound attenuated hydraulic services.
- 3 Design and size systems.
- 3.1 Design and size sound attenuated hydraulic services for a range of applications.
 - 3.2 Identify and document material combinations to achieve sound attenuation requirements.
 - 3.3 Attenuate sound for pump installations.
 - 3.4 Design and evaluate sound attenuated hydraulic services using calculations and computer software packages.
- 4 Prepare documentation.
- 4.1 Prepare a client brief for the preferred design.
 - 4.2 Prepare plans and specifications for a range of sound attenuated hydraulic services.
 - 4.3 Prepare reports on sound attenuated hydraulic services for a range of applications.
 - 4.4 Prepare testing and commissioning schedule.
 - 4.5 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS5012A Design sound attenuated hydraulic services.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS5012 Design sound attenuated hydraulic services

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Knowledge Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS5012A Design sound attenuated hydraulic services. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing an approved sound attenuated system for an approved sanitary plumbing system and a domestic drinking water system installation incorporating a pumping system to a building 29 floors in height or greater.

The design must include:

- clipping details
- pipe enclosures details
- insulation of pipework details
- vibration elimination method details
- documenting a hydraulic works specification for the above design including:
 - clipping procedures and products to be used
 - pipe enclosure and duct work requirements relating to sound attenuation
 - pumping details including sound attenuation methods, vibration methods and products
 - pipe insulation details and products to be used
 - sound attenuated hydraulic services calculations for the design.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- application of relevant Australian standards and codes, the National Construction Code (NCC), manufacturer specifications, and other relevant standard operating procedures (SOPs) relevant to the sector

- industry terminology and definitions used in the design of sound attenuated hydraulic services for all classes of building
- drafting principles
- design principles and concepts
- relevant quality assurance requirements
- relevant Environment Protection Authority (EPA) requirements
- sustainability principles and concepts
- nature of materials used and effects of performance under various conditions
- principles of technology in the design of sound attenuated hydraulic services
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- cost-benefit analysis considerations
- noise rating of habitable areas, including compliance requirements
- types of noise generation:
 - applications of system calculations:
 - sound criteria for habitable rooms
 - noise insulation characteristics of materials
 - sound transmission values of plumbing pipework and building materials
- types of pumped hydraulic systems
- pipe supports cover fixings that do not impinge on sound attenuation of the hydraulic service:
 - materials for sound attenuated hydraulic services:
 - commissioning schedule information
- operation and maintenance manuals.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPMS5013 Design hydronic heating and cooling systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS5013A Design hydronic heating and cooling systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design hydronic heating and cooling systems, determine relevant installation details and prepare system specifications for residential and commercial buildings with at least three split levels and incorporating a roof top plant room and under croft level.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit is suitable for experienced tradespeople such as hydraulic design consultants or persons in a supervisory capacity in relation to plumbing services on a new or existing site.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Evaluate design parameters.
 - 1.1 Establish scope of work for hydronic heating and cooling systems using codes, plans, specifications manufacturer requirements and client brief.
 - 1.2 Determine design requirements from relevant Australian standards, codes, plans and specifications.
 - 1.3 Analyse and apply statutory and regulatory requirements and relevant Australian standards and codes for the design of hydronic heating and cooling systems.
 - 1.4 Apply sustainability principles and concepts throughout the design process.
 - 1.5 Establish performance requirements considering safety of system users or building occupants.
 - 1.6 Conduct research to outline design parameters.
 - 1.7 Determine factors that contribute to quality, safety and time efficiency.
 - 1.8 Conduct cost-benefit analysis to compare a range of pipe materials and system designs.

- 2 Plan and detail system components.
 - 2.1 Plan layout of pipework systems including type and location of fittings and valves.
 - 2.2 Perform pipe size requirement calculations for a range of applications according to regulations and manufacturer requirements.
 - 2.3 Specify system components and circuits.
 - 2.4 Detail pump and compressor systems.
 - 2.5 Specify distribution flows, velocities and pressures for a range of applications.
 - 2.6 Specify insulation for the application.
 - 2.7 Plan pipe supports for a range of applications.
 - 2.8 Specify approved materials, jointing methods and installation requirements for hydronic heating and cooling systems.
 - 2.9 Provide allowance for expansion and contraction.

- | | | | |
|---|--------------------------|-----|---|
| 3 | Design and size systems. | 3.1 | Design hydronic systems and circuits for a range of applications. |
| | | 3.2 | Design and size hydronic systems using calculations and computer software packages. |
| | | 3.3 | Design and size manifold distribution systems for hydronic systems. |
| | | 3.4 | Design and size pumps associated with hydronic systems. |
| 4 | Prepare documentation. | 4.1 | Prepare a client brief for the preferred design. |
| | | 4.2 | Prepare plans and specifications for a range of hydronic heating and cooling systems. |
| | | 4.3 | Prepare testing and commissioning schedule. |
| | | 4.4 | Produce an operation and maintenance manual. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPMS5013A Design hydronic heating and cooling systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPMS5013 Design hydronic heating and cooling systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPMS5013A Design hydronic heating and cooling systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details for a hydronic heating and cooling system for a residential or commercial building with a three split level home incorporating a roof top plant room and undercroft level.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- application of the National Construction Code (NCC) and relevant Australian standards and codes, manufacturer specifications and operating procedures relevant to the sector
- common terminology and definitions used in design of hydronic heating and cooling systems for all classes of building
- drafting principles
- nature of materials used in hydronic heating and cooling systems and effects of performance under various conditions
- principles of technology in the design of hydronic heating and cooling systems
- work health and safety (WHS) requirements, relevant statutory regulations, codes and standards
- hydronic applications for buildings:
 - fire rating of pipework and penetrations
- sustainability principles and concepts
- statutory and regulatory requirements and relevant Australian Standards and codes
- types and system components of boilers

- health risks associated with heated water supply
- health risks associated with cooling towers
- types of insulation and sheathing
- pipe supports
- testing and commissioning schedules
- operation and maintenance manuals.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5000 Design gas bulk storage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Element and Performance Criteria 2.9 rewritten for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5000B Design gas bulk storage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design gas bulk storage systems for residential, commercial and industrial buildings.

The unit covers determining installation requirements, preparing plans and system specifications, producing testing and commissioning schedules and creating maintenance and operation manuals.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit applies to experienced people such as hydraulic design consultants, plumbers or persons in a supervisory capacity who work in plumbing services on a new or existing site.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Evaluate design parameters.
 - 1.1 Establish scope of work for gas bulk storage systems.
 - 1.2 Establish system performance requirements.
 - 1.3 Determine design requirements from plans, specifications and client brief.
 - 1.4 Review and analyse statutory and regulatory requirements and Australian and New Zealand Standards for the design of gas bulk storage systems.
 - 1.5 Conduct research, including a desktop study to identify a range of system options.
 - 1.6 Interpret manufacturer requirements and trade and technical manuals for installing gas bulk storage systems.
 - 1.7 Conduct a cost-benefit analysis to compare a range materials and system designs.

 - 2 Plan and detail system components.
 - 2.1 Determine layout of a liquefied petroleum gas (LPG) bulk storage installation according to regulatory authorities.
 - 2.2 Prepare site plans for bulk installations, including layout of pipework systems.
 - 2.3 Specify fire protection systems according to Australian and New Zealand standards and provide detail of deluge systems.
 - 2.4 Plan and detail control valves and fittings.
 - 2.5 Analyse and locate content gauges according to code requirements and specify meters and regulators.
 - 2.6 Evaluate and specify vaporisers and calculate vaporisation rates.
 - 2.7 Perform system calculations for a range of applications according to regulations and manufacturer requirements.
 - 2.8 Determine pipe fixings for a range of applications.
 - 2.9 Specify approved materials, jointing methods and installation requirements for gas bulk storage systems.

- | | |
|----------------------------|---|
| 3 Design and size systems. | 3.1 Design complex gas bulk storage systems using plans and details of system components and established design parameters. |
| | 3.2 Design a range of suitable system approaches. |
| | 3.3 Design and size systems using computer software packages. |
| 4 Prepare documentation. | 4.1 Prepare system plans. |
| | 4.2 Prepare system specifications. |
| | 4.3 Prepare system testing and commissioning schedule. |
| | 4.4 Produce operation and maintenance manual. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5000B Design gas bulk storage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5000 Design gas bulk storage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Element and Performance Criteria 2.9 rewritten for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5000B Design gas bulk storage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- evaluating and documenting design parameters for a range of gas bulk storage systems
- planning and detailing system components, including:
 - meters
 - pipes
 - regulators
 - valves
 - vaporisers
- designing a deluge system
- designing and sizing gas bulk storage systems using appropriate software.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in design of gas bulk storage systems for all classes of building
- drafting principles
- nature of materials used and effects of performance under various conditions such as:
 - minimum safe operating temperature
 - minimum safe operating pressure
 - maximum safe operating pressure
 - maximum permissible loading on supports
- principles of technology in the design of gas bulk storage systems

- requirements of state regulatory authorities, Australian Standards and manufacturer specifications, including hazards identified in relation to devices and systems used
- workplace safety requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpretation of plans and specifications
 - principles of operation of various types of LPG components and fault conditions in LPG components
 - sizing and documenting layout of gas bulk storage installations including fire protection systems such as:
 - chemical injection
 - extinguishers
 - hose reels
 - hydrants
 - monitors
 - portable and fixed types of firefighting equipment
 - spray systems
- design requirements:
 - architectural specifications
 - builder specifications
 - owner requirements
 - specialist gas use applications
- cost-benefit analysis
- statutory and regulatory requirements and Australian and New Zealand Standards:
 - Acts, regulations and local and state government policies, including group and strata titling
 - AS/NZS1596 The storage and handling of LP gas
 - AS/NZS 2430.3 Classification of hazardous areas Examples of area classification - Flammable gases
 - AS/NZS 5601.1 Gas installations - General installations
 - National Construction Code (NCC)
- manufacturer information:
 - pump tables
 - sizing tables
 - specifications
 - technical and trade manuals
- operational and safety requirements established using Australian and New Zealand Standards and local and state authority plans
- layout of pipework system considerations:
 - not unduly affecting building integrity and aesthetic appeal
 - applying principles of economy, serviceability, durability and fit for purpose

- control valves:
 - applications of valves and code requirements for installation
 - emergency shutdown valves
 - excess flow valves
 - hydrostatic relief valves
 - individual valve types
 - over pressure shut off devices
- types of fittings:
 - bends
 - inspection openings
 - junctions
 - meters
 - reflux valves
 - staged regulators
 - traps
 - vaporisers
- pumps and compressors
- meters:
 - mass flow
 - positive displacement
 - turbine
- system calculations:
 - determination of flow and appliance loadings
 - interpretation of design charts and tables
 - pipe sizing calculations
- pipe fixings:
 - anchors
 - bedding
 - bracket spacing
 - concrete support
 - corrosion protection
 - cover
 - hanging brackets
 - material requirements
 - saddles
 - wall and ceiling brackets
- materials:
 - concrete
 - copper
 - fittings and valves

- high density polyethylene (HDPE)
- measures to prevent the spread of fire
- jointing methods:
 - brazing
 - mechanical joints
 - solvent cement welding
 - threading
- installation requirements:
 - bedding
 - clipping
 - concrete support
 - installation details
 - jointing requirements
 - level of workmanship
- types of plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - sections
 - schematics produced using:
 - computer generation
 - drawing equipment
- specification:
 - clipping
 - details of specialised components
 - jointing
 - manufacturer requirements
 - materials
 - valves
 - workmanship
- testing for:
 - flow testing
 - leak check
 - vaporisation rate check
- commissioning schedule requirements:
 - flow testing
 - leak check
 - vaporisation rate check

- inclusions required in operation and maintenance manuals.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5001 Design industrial gas systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5001B Design industrial gas systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design industrial gas fuel systems including the design of valve trains, interlocks, pipework and equipment in compliance with regulatory requirements.

The unit covers determining installation requirements, preparing plans and system specifications, producing testing and commissioning schedules and creating operation and maintenance manuals.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation including work health and safety (WHS).

This unit is suitable for experienced tradespeople such as hydraulic design consultants or persons in a supervisory capacity in relation to gas and plumbing services.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate design

1.1 Establish scope of work for industrial gas systems.

- parameters.
- 1.2 Establish system performance requirements.
 - 1.3 Determine design requirements from plans, specifications and client brief.
 - 1.4 Review and analyse statutory and regulatory requirements and Australian and New Zealand Standards for the design of industrial gas systems.
 - 1.5 Conduct research including a desktop study to identify a range of system options.
 - 1.6 Interpret manufacturer requirements and trade and technical manuals for industrial gas systems.
 - 1.7 Determine factors that contribute to quality, safety and time efficiency.
 - 1.8 Conduct a cost-benefit analysis to compare a range materials and system designs.
- 2 Plan and design system components.
- 2.1 Plan layout of pipework systems including type and location of fittings and valves.
 - 2.2 Plan and specify valve trains for a range of industrial gas installations.
 - 2.3 Plan and detail interlocks and accessories and analyse, select and locate components.
 - 2.4 Select methods of protection from combustion air systems, harsh environments, heat and vibration.
 - 2.5 Specify and design air systems, burner systems and controls, appliances and closed loop systems.
 - 2.6 Detail remote filling systems and pipework and design.
 - 2.7 Perform system calculations for a range of industrial gas installations.
 - 2.8 Specify approved materials, jointing methods, pipe fixings and installation requirements.
 - 2.9 Design and size industrial gas systems for a range of applications.

- 3 Prepare documentation.
 - 3.1 Prepare system plans.
 - 3.2 Prepare system specifications.
 - 3.3 Prepare system testing and commissioning schedule.
 - 3.4 Produce operation and maintenance manual including information on how to correctly and safely maintain the system.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5001B Design industrial gas systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5001 Design industrial gas systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5001B Design industrial gas systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- planning, detailing, designing and sizing three of the following industrial gas systems:
- drying and treatment of solvents
- specialist atmospheres
- heat exchanger transfers
- air heating

and include the following components in each system design:

- burners
- controls
- regulators
- gas piping systems operating at greater than 200 KPa
- gas tightness testing for piping volumes greater than 30 litres
- appliances that include solvent or dust atmospheres
- dual fuel appliances
- flue and exhaust requirements for forced draught burners
- ensuring the systems:
 - meet all regulatory, manufacturer and Australian and New Zealand Standard requirements
 - are completed to client specifications
 - are presented in a professional manner using computer aided design and word-processing programs.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian Standards, codes, statutory and regulatory requirements:
 - AS/NZS 5601.1 Gas installations - General installations

- AS/NZS1596 The storage and handling of LP gas
- AS 3814 Industrial gas-fired appliances
- AS 1375 Industrial fuel fired appliances
- AS 61508 Functional safety
- AS 31000 – Risk management
- National Gas Law (NGL)
- National Construction Code (NCC)
- Acts, regulations and local and state government policies, including group and strata titling
- manufacturer specifications, including hazards identified in relation to devices and systems used
- other codes or standard operating procedures
- common terminology, symbols and definitions used in the design of industrial gas systems
- principles of technology in the design of industrial gas systems
- workplace safety requirements, including relevant statutory regulations, codes and standards
- cost-benefit analysis
- inclusions for establishing scope of work:
 - interpreting plans and specifications
 - sizing and documenting layout of industrial gas systems:
 - characteristics
 - compatibility
 - dimensions
 - location
 - patterns
 - quantities
 - sizes
 - surfaces
 - types of product and service
- design requirements:
 - architectural specifications
 - builder specifications
 - owner requirements
 - specialist use applications
- manufacturer requirements:
 - material specifications
 - pump tables
 - sizing tables
 - technical and trade manuals
- types information collected during desktop study for design purposes:
 - council plans

- developer plans
- applications
- architectural and building plans
- other reports as available
- performance requirements including pipe grades, cover, flow conditions and discharge requirements, established using Australian and New Zealand Standards and local authority plans
- layout of pipework systems:
 - principles of economy, serviceability and durability
 - not unduly affecting building integrity and aesthetic appeal
- fittings and valves:
 - meters
 - regulators
 - relief valves
- valve trains:
 - analysing the operation of valve components
 - sizing and selecting components using manufacturer data
- system calculations to determine:
 - explosion relief
 - purge times
 - flow and consumption
 - information in design charts and tables
 - pipe sizing
 - operating pressures greater than 200 KPa
 - expansion and anchorage provisions for pipework
 - overpressure protection systems
- materials:
 - copper (Cu)
 - fittings and appliances including measures to prevent the spread of fire
 - high density polyethylene (HDPE)
- jointing methods:
 - brazing
 - gluing
 - mechanical joints
 - solvent cement welding
 - threading
- pipe fixings:
 - anchors
 - bracket spacing
 - corrosion protection

- hanging brackets
- material requirements
- saddles
- wall and ceiling brackets
- installation requirements:
 - clipping
 - installation details
 - jointing requirements
 - level of workmanship.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5002 Design gas reticulation systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5002B Design gas reticulation systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design and size gas reticulation systems, including determining material, placement and ventilation requirements.

The unit also covers the analysis and interpretation of relevant gas codes and standards, the preparation of documentation for testing and commissioning and creating associated operation and maintenance manuals.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit applies to experienced people such as hydraulic design consultants and plumbers or persons in a supervisory capacity who work in plumbing services on new or existing sites.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate design parameters.

1.1 Establish scope of work for gas reticulation systems.

1.2 Establish system performance requirements.

- 1.3 Determine design requirements from plans, specifications and client brief.
 - 1.4 Review and analyse statutory and regulatory requirements and Australian and New Zealand Standards for the design of gas reticulation systems.
 - 1.5 Conduct research, including a desktop study to identify a range of system options.
 - 1.6 Interpret manufacturer requirements and trade and technical manuals for gas reticulation systems.
 - 1.7 Conduct a cost-benefit analysis to compare materials and system designs.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems including the type and location of fittings and valves.
 - 2.2 Calculate pipe sizes for a range of applications.
 - 2.3 Specify ventilation and flue requirements of applications.
 - 2.4 Conduct gas metering and measurement of gas consumption.
 - 2.5 Detail distribution pressures and specifications of regulators and appliances for applications.
 - 2.6 Design and detail cylinder and tank systems.
 - 2.7 Specify safety, ignition, thermostat and gas control devices in compliance with relevant standards and codes.
 - 2.8 Plan pipe fixings for applications.
 - 2.9 Specify approved materials, jointing methods and installation requirements for gas reticulation systems.
- 3 Design and size systems.
- 3.1 Design and size range of gas reticulation systems.
 - 3.2 Design and size pressure loss through pipework, valves and meters.
 - 3.3 Design and size ventilation systems for gas systems and appliances.

- 3.4 Design and layout plantroom containing liquefied petroleum gas (LPG) appliances.
- 4 Prepare documentation.
 - 4.1 Prepare plans for gas reticulation systems.
 - 4.2 Prepare specification for gas reticulation systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5002B Design gas reticulation systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5002 Design gas reticulation systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5002B Design gas reticulation systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- evaluating and documenting design parameters for at least two gas reticulation systems, including:
 - preparing and producing a plan for layout of gas reticulation systems using appropriate software.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in design of gas reticulation systems for all classes of building
- principles of technology used in design of gas reticulation systems
- requirements of state regulatory authorities, Australian Standards and manufacturer specifications, including hazards identified in relation to devices and systems
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpretation of plans and specifications
 - sizing and documenting layout of gas reticulation systems for applications, including residential, commercial and industrial
 - new projects or existing structures being renovated, extended, restored or maintained
- design requirements:
 - architectural specifications
 - builder specifications
 - owner requirements
 - specialist use applications
- cost-benefit analysis

- statutory and regulatory requirements and Australian and New Zealand Standards:
 - Acts, regulations and local and state government policies, including group and strata titling
 - AS/NZS 1596 The storage and handling of LP gas
 - AS/NZS 5601.1 Gas installations - General installations
 - National Construction Code (NCC)
 - gas utility and supplier information and requirements
 - industry standards
- requirements from manufacturers:
 - material specifications
 - pump tables
 - sizing tables
 - technical and trade manuals
- desktop study including collection and interpretation of existing data for design purposes:
 - architectural and building plans
 - council plans
 - developer plans
 - applications
 - reports as available
- layout of pipework systems:
 - have principles of economy, serviceability, durability and fit for use applied
 - not unduly affect building integrity and aesthetic appeal
- fittings and valves:
 - bends
 - couplings
 - regulators
 - tees
 - unions
- calculations for:
 - energy
 - gas volume
 - pressure
 - sizing
 - storage
- ventilation and flue requirements which must include appliance flue design and ventilation requirements according to standards, regulations and gas authorities' requirements
- specifications of regulators:
 - adjustment procedures of regulators
 - excessive pressure protection types of regulators
 - gas regulation method

- identification, analysis and documentation of regulator faults
- principles of operation
- selection and installation requirements
- sizing of regulators
- types of gas regulators
- specifications of appliances:
 - commercial appliances
 - components
 - construction of the appliance
 - domestic appliance design
 - electronic controls
 - industrial appliances
- design of cylinder and tank systems based on:
 - anticipated use
 - appropriate time period between refilling
 - gas storage requirements calculations
- pipe fixings:
 - anchors
 - bracket spacing
 - corrosion protection
 - cover
 - hanging brackets
 - material requirements
 - saddles
 - wall and ceiling brackets
- materials:
 - copper (Cu)
 - fittings and fixtures
 - galvanised steel
 - polyethylene (PE)
 - unplasticised polyvinyl chloride (uPVC)
- jointing methods:
 - brazing and threading
 - gluing
 - mechanical joints
 - rubber ring
 - solvent cement welding
- installation requirements:
 - clipping, bedding and installation detail

- installation requirements for mobile, marine installation and portable appliances (high and low-pressure)
- jointing requirements
- level of workmanship
- plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - sections
 - isometrics
- schematics which may be produced using:
 - computer generation
 - drawing equipment
- specification:
 - appliances
 - bedding
 - clipping
 - details of specialised components
 - jointing
 - manufacturer requirements
 - materials
 - valves
 - workmanship
- testing for:
 - bubble leak
 - electronic gas leak detection
 - flow
 - inspection checklist
 - pressure
 - quality assurance (QA) audit
- commissioning schedule information:
 - checking for burrs and obstructions
 - commissioning appliances
 - confirming fit for purpose
 - purging system
 - removing contaminants
- information for operation and maintenance manuals:
 - check for blockages
 - leak detection

- regular inspection
- regular maintenance requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5014 Locate and maintain piping systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5014A Locate and maintain piping systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to locate and maintain piping systems.

The unit includes a range of applications including pipe freezing equipment and procedures, sewer and drain camera equipment and procedures, under-road boring equipment and procedures, robotic sewer repair, chemical grout systems and procedures and high-pressure drain cleaning equipment and procedures.

The unit applies to consultants or supervisors in plumbing services and hydraulics on new or existing sites.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------|--|
| 1 Evaluate design parameters. | 1.1 Establish scope of work for locating and maintaining hydraulic and plumbing systems. |
|-------------------------------|--|

- 1.2 Determine relevant design requirements from relevant Australian standards, codes, plans, specifications and in accordance with work health and safety (WHS) and environmental requirements.
 - 1.3 Identify and plan tasks in conjunction with others involved in or affected by the work and statutory and regulatory authorities' requirements.
 - 1.4 Evaluate impact of works on buildings and structural elements and underground services.
 - 1.5 Analyse and apply the National Construction Code (NCC), statutory and regulatory requirements and Australian standards for the scope of works.
 - 1.6 Apply sustainability principles and concepts throughout the design process.
 - 1.7 Establish performance requirements considering safety of system users or building occupants.
 - 1.8 Interpret manufacturer requirements, trade and technical manuals to comply with design parameters.
 - 1.9 Conduct cost-benefit analysis comparing a range of pipe materials and system designs.
- 2 Plan and assess systems.
- 2.1 Identify and analyse applications of maintaining hydraulic and plumbing systems.
 - 2.2 Specify approved materials, methods and installation requirements for maintaining hydraulic services.
- 3 Prepare documentation.
- 3.1 Prepare a client brief for the preferred system of maintaining hydraulic and plumbing systems.
 - 3.2 Prepare plans and specifications for a range of scenarios relating to maintaining hydraulic and plumbing systems.
 - 3.3 Prepare testing and commissioning schedule.
 - 3.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5014A Locate and maintain piping systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5014 Locate and maintain piping systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence formatted for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5014A Locate and maintain piping systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- preparing a client brief, plans and specifications, testing and commissioning schedule and producing an operation and maintenance manual for each of the following:
 - pipe-freezing of an existing 100 mm copper water mains requiring a new 100 mm tee connection
 - a sewer line inspection using closed-circuit television (CCTV) drain camera equipment through a sewer inspection point and a sewer manhole and the removal of a blockage with high-pressure drain cleaning equipment
 - use of under-road boring equipment to install a 150 mm sewer line across a local council road containing a minimum of two lanes in width
 - an approved trenchless robotic and chemical repair system to incorporate a straight-line section of 100 mm sewer pipe and a 100 mm sewer junction repair.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in the specification of piping system maintenance procedures
- nature of materials used and effects of performance under various conditions
- requirements of state and territory regulatory authorities, Australian Standards and manufacturer specifications, including hazards identified in relation to devices and systems used
- applications for pipe and servicing locating equipment
- uses and limitations of pipe-freezing equipment

- uses and limitations of sewer and drain cameras
- uses and limitations of under-road boring equipment
- uses and limitations of trenchless, robotic sewer repair and chemical grout systems including re-lining
- uses and limitations of high-pressure drain cleaning equipment
- safety procedures relating to maintaining hydraulic and plumbing systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5015 Inspect plumbing and drainage systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5015B Inspect plumbing and drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to conduct inspections of hydraulic systems for a range of residential, commercial and industrial buildings to ensure compliance with Australian and New Zealand Standards and local authority and operational performance requirements.

This unit covers requirements for competent workplace performance in a consultancy or supervisory capacity in relation to plumbing services and hydraulics on a new or existing site.

Inspections of hydraulic systems must comply with Australian and New Zealand Standards and local authority and operational performance requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Specify local authority inspection requirements. | 1.1 Specify local authority inspection requirements for hydraulic systems according to legislation and standards. |
| | 1.2 Identify and specify approved materials for different applications. |
| | 1.3 Specify installation requirements complying with |

manufacturer manuals and regulatory requirements.

- | | | | |
|---|--------------------------------|-----|---|
| 2 | Develop inspection procedures. | 2.1 | Develop and document administrative procedures for inspection projects. |
| | | 2.2 | Develop inspection checklists. |
| 3 | Conduct inspections. | 3.1 | Establish effective communication channels with relevant site personnel and stakeholders. |
| | | 3.2 | Plan and detail inspection routes and schedules. |
| | | 3.3 | Identify and apply work health and safety (WHS) guidelines and sustainability principles to inspections and wear appropriate personal protective equipment (PPE). |
| | | 3.4 | Conduct inspection to assess compliance with regulatory requirements and professional workmanship standards. |
| | | 3.5 | Hand sketch onsite as-constructed plans and take measurements. |
| | | 3.6 | Use dispute resolution techniques as required when non-compliance is identified. |
| | | 3.7 | Implement testing procedures. |
| | | 3.8 | Accurately record inspection and testing results. |
| 4 | Prepare reports. | 4.1 | Prepare inspection reports using onsite records, including as-constructed plans. |
| | | 4.2 | Report and detail identified recommendations. |
| | | 4.3 | Produce rectification schedules. |
| 5 | Enforce compliance. | 5.1 | Detail breaches of relevant regulation or standards. |
| | | 5.2 | Issue infringement notices and implement relevant follow-up procedures. |
| | | 5.3 | Implement enforcement action issuing infringement notices in cases of non-compliance. |

- 6 Maintain records.
 - 6.1 Maintain inspection diary.
 - 6.2 Process inspection records according to established administrative procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5015B Inspect plumbing and drainage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5015 Inspect plumbing and drainage systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5015B Inspect plumbing and drainage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency in this unit, a person must meet the performance criteria for this unit by:

- conducting a compliance inspection on four different hydraulic systems and prepare a report on each instance to ensure compliance.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in the design of plumbing and drainage systems
- use of approved materials identified from Australian and New Zealand Standards and effects of performance under various conditions:
 - fixtures
 - fittings
 - pipes
- principles of technology used in the design of hydraulic systems:
 - fire services
 - gas services
 - mechanical services
 - sanitary plumbing and drainage
 - stormwater drainage
 - trade waste
 - water supply
- administrative procedures required for the inspection of hydraulic systems:
 - file management
 - inspection allocation
 - inspection records

- logging inspections
- inspection checklists requirements:
 - approved installation methods
 - authorised materials
 - project section
 - compliance with:
 - Australian and New Zealand Standards
 - distances
 - limitations
 - National Construction Code (NCC)
 - other regulatory requirements
- Inspection reports requirements:
 - defect
 - inspection
 - performance
 - quality assurance
- as-constructed plans including layout of:
 - fire services pipework
 - gas pipework
 - mechanical services pipework
 - sanitary plumbing and drainage pipework
 - stormwater pipework
 - trade waste drainage systems
 - water supply pipework
- effective dispute resolution techniques when non-compliance is identified:
 - active listening techniques
 - non-threatening body language
 - power neutral relationships
 - other recognised dispute avoidance and resolution techniques
- testing procedures:
 - air pressure tests
 - compliance checklist
 - gas leak detection
 - hydrostatic tests
 - mirror tests
 - quality assurance (QA) audit
 - sound testing
- enforcement action implemented in the case of non-compliances:
 - fines
 - legal action

- notification to plumbing licensing body
- penalties
- sustainability principles and concepts:
 - selecting appropriate components and materials
 - choosing efficient products
 - using material efficiently
 - storing and disposing of hazardous material to ensure minimal environmental impact.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5023 Design solar water heating systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPPS5023A Design solar water heating systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design efficient cost-effective solar water heating systems for residential, commercial and industrial applications for buildings with a minimum of 29 floors and a wide span, multi-building project, using proprietary components and manufacturer design information.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit applies to people such as hydraulic design consultants, plumbers or persons in a supervisory capacity in plumbing services working on new or existing sites.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------|--|
| 1 Evaluate design parameters. | 1.1 Establish scope of work for solar water heating system design using codes, plans, specifications manufacturer requirements and client brief. |
| | 1.2 Assess locations of solar collectors and evaluate effect of |

- each location on efficiency.
- 1.3 Analyse and identify statutory and regulatory requirements and relevant Australian Standards and codes for the design of solar water heating systems.
 - 1.4 Establish performance requirements considering safety of system users or building occupants.
 - 1.5 Evaluate environmental and community benefits of solar water heating systems.
 - 1.6 Apply sustainability principles and concepts as part of the design process.
 - 1.7 Conduct research including a desktop study to outline design parameters.
 - 1.8 Determine factors that contribute to quality, safety and time efficiency.
 - 1.9 Conduct cost-benefit analysis to compare a range of materials and system designs.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems including type and location of fittings and valves.
 - 2.2 Select and evaluate the configuration and application of a range of proprietary solar heated water systems, materials and valves.
 - 2.3 Perform calculations for solar water heating systems.
 - 2.4 Plan and detail typical configuration of a hydraulic circuit (flow and return) and its components for a pumped-storage solar water heating system.
 - 2.5 Specify water quality and water pre-treatment methods.
 - 2.6 Specify suitable types and levels of insulation for system components and detail a range of methods to protect from freezing and over performance.
 - 2.7 Calculate pipe size, velocity, flow and pressure for a range of applications.
 - 2.8 Plan pipe supports for a range of applications.

- 2.9 Specify approved materials, jointing methods and installation requirements.
 - 2.10 Provide allowance for expansion and contraction.
- 3 Design and size systems.
 - 3.1 Select solar collectors to meet identified installation requirements.
 - 3.2 Design and size solar water heating, solar pre-heat and solar pool and spa heating systems to meet requirements.
 - 3.3 Consider legionella bacteria mitigation design principles in the design of solar water heating systems.
- 4 Prepare documentation.
 - 4.1 Prepare client brief for the preferred design.
 - 4.2 Prepare plans and specifications for solar water heating systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5023A Design solar water heating systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5023 Design solar water heating systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPPS5023A Design solar water heating systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting an approved layout using two methods of solar heated water systems with:
 - one gas-boosted commercial solar system
 - one heat pump-boosted system
- for:
 - a high-rise unit development building to a minimum of 29 floors including sanitary fixtures on each floor level
 - a wide span, multi-building project such as a school, nursing home or university incorporating a solar pre-heat systems and heating systems.

Each project is to include a specification and maintenance manual.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- application of the National Construction Code (NCC) and relevant Australian standards and codes, manufacturer specifications and operating procedures relevant to the sector
- common terminology and definitions used in design of solar water systems
- work health and safety (WHS) requirements, relevant statutory regulations, codes and standards
- cost-benefit analysis
- inclusions for establishing scope of work:
 - interpreting plans and specifications
 - sizing and documenting layout solar water heating systems:
 - characteristics
 - compatibility
 - dimensions

- location
- patterns
- quantities
- sizes
- surfaces
- types of product and service
- design requirements:
 - architectural specifications
 - builder specifications
 - owner requirements
 - specialist use applications
- manufacturer requirements:
 - material specifications
 - pump tables
 - sizing tables
 - technical and trade manuals
- types of information collected during desktop study for design purposes:
 - council plans
 - developer plans
 - applications
 - architectural and building plans
 - other reports as available
- principles of technology used in design of solar water heating systems:
 - solar radiation calculations
 - solar efficiencies
 - sustainability principles and concepts
- installation requirements
- health risks and hazards associated with solar water heating systems
- testing and commissioning schedule
- operation and maintenance manuals.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5024 Conduct a water audit and identify water-saving initiatives

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5024A Conduct a water audit and identify water-saving initiatives. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to conduct water audits in residential buildings with a minimum of 50 units; commercial buildings with a minimum of 20 floors, including a commercial laundry for hospital or nursing home.

This unit also specifies the skills and knowledge required to propose types of water-saving devices that are appropriate where water use reductions are possible.

The role involves interaction with builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit applies to experienced people such as hydraulic design consultants or persons in a supervisory capacity in relation to plumbing services on a new or existing site.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes. Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Calculate water use. 1.1 Establish scope of work for conducting water audits.

- 1.2 Identify requirements from relevant Australian Standards, codes, plans, specifications, manufacturer requirements and client brief.
 - 1.3 Apply sustainability principles and concepts throughout water audit process.
 - 1.4 Specify types of flow and pressure-measuring devices including their location and use.
 - 1.5 Conduct flow and pressure tests and measure flows at outlets.
 - 1.6 Compare actual water use to ideal use and calculate the difference.
- 2 Identify excessive water and energy use.
 - 2.1 Implement leak identification processes considering safety of system users or building occupants.
 - 2.2 Measure and evaluate flows against relevant standards and user requirements.
 - 2.3 Evaluate suitability of existing fixtures and fittings against new technology.
 - 2.4 Identify and compare water use times against optimal timing.
 - 2.5 Identify and analyse existing inefficient system conditions.
 - 2.6 Conduct pressure test and identify and compare consequences of high and low pressures to industry standards.
 - 2.7 Evaluate energy saving associated with reduction in water use.
- 3 Evaluate methods to conserve water and energy.
 - 3.1 Identify flow restrictors, sensors, pressure-limiting devices and automatic systems for a range of applications.
 - 3.2 Evaluate alternative processes and practices for optimum water and energy savings.
 - 3.3 Evaluate alternative fixtures and fittings for optimum

- water and energy savings.
- 3.4 Apply rainwater harvesting techniques and processes.
 - 3.5 Design recycling and re-use processes.
 - 3.6 Design water metering strategies to monitor and problem solve water saving systems.
- 4 Report findings.
- 4.1 Conduct a cost-benefit analysis including the investment return period.
 - 4.2 Prepare water and energy audit report.
 - 4.3 Identify and report resulting environmental benefits and water and energy savings.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5024A Conduct a water audit and identify water-saving initiatives.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5024 Conduct a water audit and identify water-saving initiatives

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPPS5024A Conduct a water audit and identify water-saving initiatives. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- conducting a water audit, identifying water-saving initiatives for the following building types:
 - a minimum 50-unit residential building
 - a minimum 20 floor commercial office building incorporating a minimum of one toilet block per floor
 - a commercial laundry in a hospital or nursing home
- documenting and reporting on an audit report for each of the above building types.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- hazards associated with devices and systems used in the hydraulic sector
- installation methods used in hydraulic systems
- nature of materials and effect of their performance in a variety of conditions
- preparation and interpretation of plans and specifications
- requirements of Commonwealth, state or territory regulatory authorities, relevant Australian Standards and codes, manufacturer specifications, National Construction Code (NCC) and other relevant codes, standards and operating procedures
- terminology and definitions used in hydraulic design
- variety of applications of technology principles in design of water and energy-efficient usage systems for all classes of building
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- performance requirements including maintenance of flow, velocity, pressure and discharge requirements of the client, using relevant Australian Standards, NCC or other relevant codes and standards

- alternative processes and practices for water saving
- rainwater harvesting which must include collection, storage and distribution of rainwater, including the use of tanks and dams
- water and energy audit reports.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5025 Design grey water re-use systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.7.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5025A Design grey water re-use systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design grey water re-use systems. The unit addresses the collection, treatment, diversion and storage options for the design of grey water re-use systems for wide span and high-rise mixed development building projects.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

The requirements of this unit are typically carried out by experienced people such as hydraulic design consultants or design engineers.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------|---|
| 1 Evaluate design | 1.1 Establish scope of work for design of grey water re-use |
|-------------------|---|

- parameters.
- systems for wide span and high-rise building projects.
- 1.2 Establish performance requirements considering the safety of system users or building occupants.
 - 1.3 Determine design requirements from relevant Australian Standards, codes, plans, specifications and client brief.
 - 1.4 Identify potential household or community health and environmental risks and take measures to protect public health that impact the design parameters.
 - 1.5 Apply sustainability principles and concepts as part of the design process.
 - 1.6 Conduct additional research to outline design parameters.
 - 1.7 Interpret manufacturer requirements and trade and technical manuals for grey water re-use systems.
 - 1.8 Conduct cost-benefit analysis for implementing the proposed design.
- 2 Plan and detail system components.
- 2.1 Detail primary, secondary and advanced secondary treatment and tertiary systems.
 - 2.2 Plan layout of pipework systems including type and location of fittings, valves, controls and other system components.
 - 2.3 Design and detail changes to building drainage system and identify inspection requirements.
 - 2.4 Evaluate and detail grey water land application, disposal, diversion, storage and wet weather storage options to identify problems and plan solutions.
 - 2.5 Plan and detail stored and pressurised grey water systems for irrigation, sanitary flushing and other approved uses.
 - 2.6 Plan and detail storage tanks and approved disposal options.
 - 2.7 Calculate pipe size and pump duty and size and detail pumpwell, pump and pump control requirements.
 - 2.8 Evaluate approved materials and jointing methods for grey water re-use systems, design pipe supports and

specify installation requirements.

- | | | | |
|---|--------------------------|-----|---|
| 3 | Design and size systems. | 3.1 | Design grey water re-use systems for residential, commercial and industrial applications which include water treatment and backflow protection of drinking and non-drinking water supply systems. |
| | | 3.2 | Design grey water re-use systems to ensure that the systems can be properly and safely maintained. |
| | | 3.3 | Design and size grey water re-use systems using relevant computer software packages. |
| 4 | Prepare documentation. | 4.1 | Prepare client brief of the proposed design. |
| | | 4.2 | Prepare plans and specifications for grey water re-use systems. |
| | | 4.3 | Prepare testing and commissioning schedule. |
| | | 4.4 | Produce operation and maintenance manual including information on how to properly and safely maintain the system. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5025A Design grey water re-use systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5025 Design grey water re-use systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.7.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5025A Design grey water re-use systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details of a greywater re-use system for a high-rise mixed development building and a wide span project, including:
 - a specification for both
 - planning and detailing systems components, including:
 - storage tanks
 - system overflow
 - treatment systems
 - piping systems
 - plumbing systems
 - usage systems
- designing and sizing a grey water re-use system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- approved installation methods
- hazards associated with devices and systems used in the hydraulic sector
- nature of materials and effect of their performance in a variety of conditions
- organisational quality procedures and processes
- principles of technology in the design of grey water re-use systems for residential, commercial and industrial applications to include water treatment and backflow protection of drinking and non-drinking water supply systems

- terminology and definitions used in hydraulic design
- work drawings and specifications
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpretation of plans and specifications
 - sizing and documenting layout of grey water re-use systems for residential, commercial and industrial applications to include water treatment and backflow protection of drinking and non-drinking water supply systems
- design requirement:
 - architectural plans
 - building specifications
 - owner requirements
 - pipework identification
 - sizing of pipework
 - backflow protection of drinking and non-drinking water supply systems
 - water treatment
 - specialist water use applications
- health risks:
 - abdominal pain
 - acute enteritis
 - bacillary dysentery
 - chest pain
 - cholera
 - common colds
 - coughing
 - diarrhoea
 - digestive and nutritional disturbances
 - dysentery
 - fever
 - gastroenteritis
 - giardiasis
 - helminthes, including flukes and worms
 - hepatitis
 - hookworm disease
 - infectious hepatitis
 - meningitis
 - muscle aches
 - neurological symptoms, including nervousness and insomnia
 - poliomyelitis

- respiratory infections, such as pneumonia
- restlessness
- salmonellosis (food poisoning)
- taeniasis
- toxoplasmosis
- typhoid fever
- vomiting
- weight loss
- environmental risks:
 - algal blooms
 - excess nutrient loads
 - fish kills
 - oxygen depletion
- measures to protect public health:
 - auditing
 - contact avoidance
 - contact minimisation
 - disinfection and sterilisation
 - education
 - legislation
 - licensing
 - maintenance
 - separation barriers
 - set back distances
 - timing discharges
 - wet weather storage
- cost-benefit analysis comparing:
 - the range of suitable materials and system choices available to enable cost-effective choices to be made without compromising integrity of project
 - water savings and environmental benefits against initial and ongoing maintenance costs
- national water programs, statutory and regulatory requirements, relevant Australian Standards, and codes:
 - AS/NZS 1546 On-site domestic wastewater treatment units
 - AS/NZS 1547 On-site domestic wastewater management
 - AS/NZS 3500 Plumbing and drainage set
 - AS 2200 Design charts for water supply and sewerage
 - National Construction Code (NCC)
 - Commonwealth, state or territory government policies, including health departments
- manufacturer requirements:

- material specifications
- grey water treatment systems
- pump installation
- pipe sizing
- storage systems
- technical and trade manuals
- information gathered during desktop to support design purposes:
 - architectural and building plans
 - developer plans
 - manufacturer data
 - building applications
 - brochures
 - forms
 - policies
 - reports
- performance requirements including compliance limits for:
 - bacteria levels
 - chlorine levels
 - nutrients
 - pH
 - phosphates
- performance requirements established using relevant Australian Standards, codes and local authority plans:
 - cover
 - discharge
 - flow conditions
 - pipe grades
- layout of pipework systems:
 - drainage systems
 - elevated pipework systems
 - gravity systems
 - pumped and rising mains
 - requirements for irrigation systems
 - requirements for flushing water systems
- stack systems:
 - fully vented
 - fully vented modified
 - single stack
 - single stack modified
 - waste stack

- two-pipe system
- reduced velocity aerator system
- layout of pipe work system design:
 - designing pipework systems to not unduly affect building integrity and aesthetic appeal
 - location of pipework (fire rating of enclosure)
 - demonstrating principles of economy, serviceability, durability and fit for use
- fittings, valves and controls:
 - backflow prevention devices
 - irrigation control systems
 - isolating valves
 - level indicators
 - pump controls
- land application options:
 - surface irrigation
 - subsurface irrigation
 - spray irrigation
- storage tanks:
 - connections
 - containment
 - location
 - material
 - overflow provision
 - pumps
 - sizing
 - support
 - switches
 - valves
 - vermin control
- pipe size and pump duty calculations:
 - calculating pipe sizing
 - calculating pressure and flow requirements
 - determining flow and fixture loadings
 - interpreting design charts and tables
- pump well, pump and pump control requirements:
 - automatic controls
 - capacity
 - corrosion-resistant materials
 - detailing
 - high and low-level water controls and alarms

- inlet and outlet design requirements
- installation and mounting requirements
- macerator requirements
- pump sizing
- pump well sizing
- selection of pump type
- valve requirements
- warning system
- materials:
 - copper (Cu)
 - polypropylene (PP)
 - polybutylene (PB)
 - polyethylene (PE)
 - unplasticised polyvinyl chloride (uPVC)
 - other approved material
- jointing methods:
 - brazing
 - compression joints
 - electrofusion welding
 - mechanical joints
 - solvent cement
 - threading
 - other approved jointing methods
- pipe supports:
 - anchors
 - bedding
 - bracket spacing
 - concrete support
 - corrosion protection
 - manufacturer-recommended specific fixings
 - material requirements
 - provision for expansion
 - saddles
- installation requirements:
 - pipe protection such as:
 - cover
 - corrosion
 - impact
 - fire rating
 - level of workmanship

- manufacturer-recommended specific fixings
- pipe support
- provision for expansion
- serviceability and access
- methods for applying sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - local environment consideration
 - water efficiency
 - re-use of greywater
 - consideration of the Green Building Council of Australia rating scheme
- types of plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - sections
 - schematics produced using:
 - computer generation
 - drawing equipment
- specification:
 - backflow prevention
 - flow requirements
 - jointing
 - manufacturer requirements
 - materials
 - residual pressures
 - work health and safety (WHS)
 - specialised components
 - storage
 - support
 - testing
 - valve selection
 - water treatment
 - workmanship
- testing for:
 - air pressure
 - backflow protection

- defect inspection
- drainage inspection
- hydrostatic
- performance:
 - flow
 - pressure
- water quality
- quality assurance (QA) audit
- commissioning schedule information:
 - balancing disposal system
 - flow and pressure adjustments
 - leak check
 - pump settings
 - pressure test
 - safety requirements
 - system certification
 - system flushing
 - system defects
 - system functions as per design
 - system purge
 - valve operation
 - ventilation
 - vermin control
- operation and maintenance manual information:
 - as installed drawings
 - certification documentation
 - land application compliance checks
 - maintenance schedules
 - manufacturer brochures
 - ongoing maintenance requirements
 - pump maintenance
 - regular inspections
 - results of commissioning test
 - safety management system
 - surface ponding checks
 - system detail, setting and operations
 - valve function
 - system operational parameter adjustments and checks:
 - chlorine levels
 - dissolved oxygen

- nitrates
- pH
- phosphates
- suspended solids
- water quality.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5026 Design rainwater collection, storage, distribution and re-use systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5026A Design rainwater collection, storage, distribution and re-use systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design systems for the collection, storage, distribution and re-use of rainwater for drinking and non-drinking uses, including irrigation, toilet flushing and other uses approved by relevant authorities for high-rise mixed development buildings and wide span projects, such as a school or industrial complex.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

The unit requirements are typically carried out by experienced people such as hydraulic design consultants or design engineers.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate design parameters.

1.1 Establish scope of work for rainwater harvesting systems for wide span and high-rise building projects.

- 1.2 Establish performance requirements considering safety of system users or building occupants.
 - 1.3 Determine design requirements from relevant Australian Standards, codes, plans, specifications and client brief.
 - 1.4 Apply sustainability principles and concepts as part of the design process.
 - 1.5 Analyse potential contamination sources and create design solutions.
 - 1.6 Establish rainfall patterns and required rainwater storage volumes.
 - 1.7 Interpret manufacturer requirements and trade and technical manuals for rainwater harvesting systems.
 - 1.8 Conduct research to outline design parameters.
 - 1.9 Conduct cost-benefit analysis to compare a range of pipe materials and system designs.
- 2 Plan and detail system.
- 2.1 Specify tank type and location.
 - 2.2 Plan layout of pipework systems including type and location of fittings, valves and controls.
 - 2.3 Plan and detail first-flush systems.
 - 2.4 Specify water contamination solutions and filtration systems.
 - 2.5 Calculate pipe size for a range of applications.
 - 2.6 Plan and detail separation of services and backflow prevention devices.
 - 2.7 Specify approved non-contaminating materials and jointing methods for rainwater harvesting and design pipe supports.
 - 2.8 Size and detail pump and ancillary requirements.
 - 2.9 Specify installation requirements.
 - 2.10 Specify water treatment according to state and territory health requirements.

- 2.11 Specify vermin protection according to manufacturer and state and territory requirements.
 - 2.12 Provide allowance for expansion and contraction.
- 3 Design and size systems.
 - 3.1 Design and detail rainwater harvesting systems.
 - 3.2 Design and detail rainwater re-use systems.
 - 3.3 Design and size rainwater harvesting systems using calculations and manufacturer's data sheets.
- 4 Prepare documentation.
 - 4.1 Produce client brief of the preferred design.
 - 4.2 Prepare plans and specifications for a range of rainwater harvesting systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5026A Design rainwater collection, storage, distribution and re-use systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5026 Design rainwater collection, storage, distribution and re-use systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5026A Design rainwater collection, storage, distribution and re-use systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details for:
 - a high-rise mixed development building, and
 - a wide span project such as a school or industrial complex
- preparing plans and specifications for each of the above projects and include the following system components:
 - authority connection
 - backflow prevention requirements
 - filters
 - fixtures and fitments
 - piping systems
 - pumps
 - storage
 - water treatment
- documenting the evaluation of design parameters including rainfall, client, regulatory, manufacturer and relevant Australian Standard requirements and storage capacity for each design
- preparing plans and specifications for rainwater harvesting and re-use systems to industry standards.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in the design of rainwater collection, storage, distribution and re-use
- key features of work plans and specifications

- nature of materials used and effects of performance under various conditions
- organisational quality procedures and processes
- principles of technology in the design of rainwater collection, storage, distribution and re-use for residential, commercial and industrial applications to include water treatment and backflow protection of drinking and non-drinking water supply systems
- terminology and definitions used in hydraulic design
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpreting plans and specifications
 - rainfall analysis
 - sizing and documenting layout of rainwater harvesting systems for residential, commercial and industrial applications to include water treatment and backflow protection of drinking and non-drinking water supply systems
- design requirements:
 - architectural plans
 - building specifications
 - owner requirements
 - pipework identification
 - sizing of pipework
 - backflow protection of drinking and non-drinking water supply systems
 - water treatment
 - specialist water use applications
- contamination:
 - bacterial
 - heavy metal
 - inorganic
 - odour
 - organic
 - taste
 - silt
 - viral
 - vermin
- cost-benefit analysis comparisons of:
 - design styles
 - energy costs
 - expected design life
 - labour costs
 - material costs
 - safety factors
 - speed of installation

- suitable materials
- statutory, regulatory requirements and relevant Australian Standards and codes:
 - AS/NZS 3500 Plumbing and drainage set
 - AS 2200 Design charts for water supply and sewerage
 - National Construction Code (NCC)
- manufacturer requirements:
 - material specifications
 - pipe sizing
 - pump installation
 - storage system
 - technical and trade manuals
- information gathered through desktop study to support design purposes:
 - architectural and building plans
 - developer plans
 - manufacturer data
 - building applications
 - brochures
 - forms
 - policies
 - reports
- performance requirements:
 - compliance limits for:
 - bacteria levels
 - nutrients
 - pH
 - silt control
 - vermin protection
 - overflow discharge requirements
 - requirements established using relevant Australian Standards, codes and local authority plans for:
 - cover
 - discharge
 - flow conditions
 - pipe grades
- tank types:
 - concrete
 - fibreglass
 - metal
 - polymer
 - other approved materials

- tank locations:
 - above-ground
 - in-ground
- layout of pipework systems:
 - gravity systems
 - pumped systems
 - designing to not unduly affect building integrity and aesthetic appeal
 - designing to include principles of economy, serviceability, durability and fit for use
- fittings, valves and controls:
 - backflow prevention devices
 - inspection openings
 - irrigation control systems
 - isolating valves
 - level indicators
 - pump controls
- first-flush systems:
 - electronic
 - float-activated
 - mechanical
 - volume-activated
- filtration systems:
 - overflow devices
 - sand
 - screens
 - settlement tanks
 - strainers
- water contamination solutions:
 - disinfection
 - ultraviolet
- pipe size calculations:
 - determination of flow
 - interpretation of design charts and tables
 - pipe sizing calculations
 - reduced level calculations
- materials:
 - copper (Cu)
 - polyethylene (PE)
 - polypropylene (PP)
 - polybutylene (PB)
 - unplasticised polyvinyl chloride (uPVC)

- other approved materials
- jointing methods:
 - brazing
 - compression joints
 - electrofusion welding
 - mechanical joints
 - solvent cement
 - threading
 - other approved jointing methods
- pipe support:
 - anchors
 - bedding
 - bracket spacing
 - concrete support
 - corrosion protection
 - manufacturer-recommended specific fixings
 - material requirements
 - provision for expansion
 - saddles
- pump and ancillary requirements:
 - automatic controls
 - pump duties
 - corrosion-resistant materials
 - level controls and alarms
 - pump selection and pump sizing, based on:
 - flow
 - velocity
 - lift
 - probable simultaneous demands
- installation requirements:
 - level of workmanship
 - manufacturer-recommended specific fixings
 - pipe support
 - provision for expansion
 - serviceability and access
 - pipe protection:
 - cover
 - corrosion
 - impact
 - fire rating

- rainwater re-use systems:
 - roof water collection
 - water treatment
 - pumps
 - approved drinking and non-drinking use
 - storage:
 - tanks
 - open in-ground (dam)
- methods for applying sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - local environment consideration
 - water efficiency
 - re-use of greywater
 - consideration of the Green Building Council of Australia rating scheme
- types of plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - sections
 - schematics produced using:
 - computer generation
 - drawing equipment
- specification:
 - backflow prevention
 - flow requirements
 - jointing
 - manufacturer requirements
 - materials
 - residual pressures
 - work health and safety (WHS)
 - specialised components
 - storage
 - support
 - testing
 - valve selection
 - water treatment

- workmanship
- testing for:
 - air pressure
 - backflow protection
 - defect inspection
 - drainage inspection
 - hydrostatic
 - performance:
 - flow
 - pressure
 - water quality
 - quality assurance (QA) audit
- commissioning schedule information:
 - balancing disposal system
 - flow and pressure adjustments
 - leak check
 - pressure test
 - pump settings
 - safety requirements
 - system certification
 - system defects
 - system flushing
 - system functions as per design
 - system purge
 - valve operation
 - ventilation
 - vermin control
- operation and maintenance manual information:
 - as installed drawings
 - certification documentation
 - maintenance schedules
 - manufacturer brochures
 - ongoing maintenance requirements
 - pump maintenance
 - regular inspections
 - results of commissioning test
 - safety management system
 - system detail, setting and operations
 - valve function
 - system operational parameter adjustments and checks:

- disinfection
- first flush devices
- pH
- silt control
- suspended solids
- water quality.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5027 Design irrigation systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5027A Design irrigation systems.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design irrigation systems to relevant Australian Standards, codes, the National Construction Code (NCC) and other relevant legislative requirements to meet occupier needs and industry standards.

This unit covers requirements for work in a consultancy or supervisory capacity in relation to the design of irrigation systems for residential, commercial, industrial, sporting ovals and agricultural properties with or without connection to reticulated supply.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate design parameters.	1.1 Identify and confirm the scope of work for irrigation systems.
	1.2 Determine design requirements from relevant Australian Standards, codes, plans, specifications and client brief.
	1.3 Conduct cost-benefit analysis comparing a range of pipe materials and system designs.

- 1.4 Interpret, analyse and apply statutory and regulatory requirements and relevant Australian Standards and codes for the design of irrigation systems.
 - 1.5 Obtain trade and technical manuals and interpret manufacturer requirements for irrigation systems.
 - 1.6 Conduct research to outline design parameters.
 - 1.7 Conduct flow and pressure tests for the irrigation systems.
 - 1.8 Establish water sources, volumes and areas to be irrigated.
 - 1.9 Analyse and categorise soil types, documenting the impacts on irrigation systems as per workplace procedures.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems including the type and location of fittings, valves and controls.
 - 2.2 Detail the type, location and requirements for backflow prevention devices.
 - 2.3 Calculate pipe sizes, velocities, flows and pressures for a range of applications.
 - 2.4 Specify the approved materials and jointing methods for irrigation systems.
 - 2.5 Detail sections and components of the irrigation system.
 - 2.6 Design pipe supports for a range of applications.
 - 2.7 Size and detail pump enclosure and control requirements.
 - 2.8 Specify installation requirements for irrigation management system.
 - 2.9 Determine water storage requirements.
 - 2.10 Make allowance for pipe movement.
- 3 Design and size systems
- 3.1 Analyse requirements and consider options available to design irrigation systems.

- 3.2 Design delivery systems and layout.
 - 3.3 Design and size irrigation systems.
 - 3.4 Determine required water application to establish and maintain plant life.
 - 3.5 Apply sustainability principles and concepts throughout the design process.
- 4 Prepare documentation.
- 4.1 Prepare and document client brief of the desired design.
 - 4.2 Prepare and document plans and specifications for a range of irrigation systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5027A Design irrigation systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5027 Design irrigation systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5027A Design irrigation systems.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting layout details of an irrigation system including specification for a:
 - sports oval incorporating stormwater collection and use, with a mains pressure drinking water top-up and with chemical additives
 - a landscaped area for a mixed development site connected to a main pressure recycled (non-drinking) water main
- evaluating and documenting design parameters to relevant Australian Standards and codes, and regulatory, client and manufacturer requirements
- planning and detailing system components that include:
 - backflow prevention devices
 - irrigation management-control system
 - pumping requirements
 - water delivery outlets
 - piping requirements
- designing and sizing two irrigation systems, using appropriate calculations and computer software for specific applications.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- statutory and regulatory requirements related to designing irrigation systems including:
 - Commonwealth government
 - state or territory governments
 - local authorities
 - AS/NZS 3500 National plumbing and drainage
 - AS2200 Design charts for water supply and sewerage

- National Construction Code (NCC)
- state or territory health departments
- common terminology and definitions used in the design of irrigation systems
- design requirements including:
 - architectural plans
 - backflow requirements
 - interpretation and application of irrigation services, drawings and symbols
 - irrigation management system
 - owner requirements
 - precipitation and evaporation rates
 - pumping requirements
 - required water application to establish and maintain plant life
 - source of irrigation water
 - sprinkler head systems
 - system requirements
 - water storage requirements
- cost-benefit analysis comparing the range of suitable materials and system choices available to enable cost-effective choices without compromising the integrity of the project
- manufacturer requirements including:
 - irrigation management system
 - material specification
 - pump tables
 - sprinkler head performance
 - sub-surface irrigation
 - technical and trade manuals
- nature of materials used and effects of performance under various conditions including:
 - composite pipework
 - copper (Cu)
 - cross-linked polyethylene (PE-X)
 - polypropylene (PP)
 - polybutylene (PB)
 - polyvinyl chloride (PVC)
- characteristics and application of different backflow prevention devices including:
 - double-check valve assembly (DCV)
 - dual-check valve with intermediate vent (DuCV)
 - pressure type vacuum breaker (PVB)
 - reduced pressure zone device (RPZD)
 - registered air gap (RAG)
 - registered break tank (RBT)

- reduced pressure detector assembly (RPDA)
- reduced pressure zone device (RPZD)
- other approved backflow prevention devices
- layout of pipework systems including:
 - distribution
 - dual feed systems
 - range pipes
 - ring main
 - single pipe
 - control stations
- sections and components of the irrigation systems including:
 - irrigation stations
 - manifold systems
 - sensors
 - automatic controls
 - sprinklers, drippers and irrigators
 - sprinkler patterns
- testing and commissioning schedule requirements including:
 - defect inspection
 - hydrostatic
 - mains pressure
 - performance
 - quality assurance (QA) audit
 - system certification
 - flow test
 - leak check
 - pressure test
 - system defect
 - system functions as per design
 - valve and system operation
- operation and maintenance manual requirements including:
 - as installed drawings
 - results of commissioning test
 - certification documentation
 - maintenance schedules
 - manufacturer brochures and technical information
 - operational procedures
 - valve function
- installation requirements including:
 - pipe connection

- bedding and backfilling
- corrosion
- cover
- ground stability
- impact
- level of workmanship
- manufacturer recommendations
- pipe support
- provision for pipe movement
- serviceability and access
- delivery systems and layout requirements including:
 - main delivery
 - number and design control
 - design:
 - avoiding obstacles
 - irregular shapes
 - minimising water wastage
 - range of irrigation applications
 - range pipes
 - ring mains
 - size and water delivery of sprinklers
 - sprinkler head patterns and placement
- plans and specification requirements including:
 - plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - schematics
 - sections
 - specifications:
 - bedding
 - flow requirements
 - irrigation management control system
 - jointing
 - manufacturer requirements
 - materials
 - pumps
 - residual pressures

- work health and safety (WHS)
 - specialised components
 - sprinkler head selection
 - storage tanks
 - support
 - testing
 - valve selection
 - water treatment
 - workmanship
- principles of technology used in the design of irrigation systems for a range of applications
 - characteristics of different soil types and the impact on the irrigation systems design
 - characteristics and application of different fittings, valves and controls
 - characteristics and application of different jointing methods
 - flow and pressure testing procedures
 - information required to undertake a desktop study to outline design parameters
 - pipe support design requirements
 - sustainability principles and concepts including:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - water efficiency
 - re-use of water, such as rainwater, grey water and recycled non-drinking water
 - consideration of the Green Building Council of Australia rating scheme.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5028 Design trade waste pre-treatment systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5028A Design trade waste pre-treatment systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design trade waste pre-treatment systems for commercial and industrial premises, such as commercial kitchens and laundries, mechanical workshops and commercial swimming pools, prior to discharge to authority's point of sewer connection.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

The unit requirements are typically undertaken by experienced tradespeople such as hydraulic design consultants or persons in a supervisory capacity in relation to plumbing services on a new or existing site.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate design parameters.

1.1 Establish scope of work for trade waste pre-treatment systems prior to discharge to authority's point of sewer connection.

- 1.2 Establish performance requirements considering safety of system users or building occupants.
 - 1.3 Determine design requirements from relevant Australian Standards, codes, plans, specifications, authorities' requirements and client brief.
 - 1.4 Apply sustainability principles and concepts as part of the design process.
 - 1.5 Interpret manufacturer requirements and trade and technical manuals.
 - 1.6 Conduct research to outline design parameters.
 - 1.7 Analyse trade waste applications and conduct a cost-benefit analysis to compare a range of pipe materials and system designs.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems including type and location of fittings and controls.
 - 2.2 Plan and detail solid removal systems.
 - 2.3 Plan and detail grease and oil interceptors, neutralising chambers and wash-down areas incorporating stormwater exclusion.
 - 2.4 Plan and detail diffused air flotation systems.
 - 2.5 Detail bacterial treatment processes and combined and specialised treatment processes for a range of commercial and industrial applications.
 - 2.6 Incorporate general housekeeping procedures to minimise discharge of trade waste.
 - 2.7 Perform system calculations for a range of applications.
 - 2.8 Size and detail pump well, pumps, controls and equipment requirements.
 - 2.9 Design pipe supports for a range of applications.
 - 2.10 Specify approved materials, jointing methods and installation requirements for trade waste pre-treatment systems.

- | | |
|----------------------------|---|
| 3 Design and size systems. | 3.1 Design and size trade waste pre-treatment systems for commercial and industrial premises. |
| | 3.2 Design and size trade waste pre-treatment systems using calculations and local authorities and regulators' policies and requirements. |
| | 3.3 Design flow monitoring systems for trade waste applications. |
| | 3.4 Design venting of trade waste systems to comply with local authority requirements. |
| 4 Prepare documentation. | 4.1 Produce client brief of the preferred design. |
| | 4.2 Prepare plans and specifications for trade waste pre-treatment systems. |
| | 4.3 Prepare testing and commissioning schedule. |
| | 4.4 Produce operation and maintenance manual including information on how to properly and safely maintain the system. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5028A Design trade waste pre-treatment systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5028 Design trade waste pre-treatment systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5028A Design trade waste pre-treatment systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the installation and layout details for two trade waste pre-treatment systems from the following:
 - chemical facilities
 - commercial kitchen
 - commercial and industrial facilities that produce a liquid waste stream
 - commercial and industrial laundry
 - food preparation facilities
 - laboratories
 - motor vehicle workshops
 - photography development facilities
 - commercial swimming pool
 - wash-down facilities
- preparing plans and specifications to industry standards for both selections
- documenting the evaluation of design parameters including client, regulatory, manufacturer and relevant Australian Standard requirements for each design.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- hazards associated with devices and systems used in the hydraulic sector
- design of the options for the pre-treatment of trade waste
- approved installation methods for trade waste pre-treatment systems
- key features of work plans and specifications
- nature of materials and effect of their performance in a variety of conditions
- organisational quality procedures and processes

- terminology and definitions used in hydraulic design
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpreting plans and specifications
 - sizing and documenting layout of trade waste pre-treatment systems for commercial and industrial applications
- design requirements:
 - architectural plans
 - building specifications
 - cleaning and maintenance procedures
 - installation requirements
 - odour control
 - owner requirements
 - pipework identification
 - sizing
 - trade waste treatment
 - ventilation
- statutory and regulatory requirements and relevant Australian Standards and codes which may include:
 - AS/NZS 3500 Plumbing and drainage set
 - AS 2200 Design charts for water supply and sewerage
 - Commonwealth, state or territory and local governments requirements
 - National Construction Code (NCC)
 - utility provider's trade waste regulations
 - other relevant Australian Standards and codes
- trade waste applications:
 - chemical facilities
 - commercial kitchen
 - commercial and industrial facilities that produce a liquid waste stream
 - commercial and industrial laundry
 - food preparation facilities
 - laboratories
 - motor vehicle workshops
 - photography development facilities
 - commercial swimming pool
 - wash-down facilities
- cost-benefit analysis comparisons:
 - design styles
 - energy costs

- expected design life
- labour costs
- material costs
- safety factors
- speed of installation
- suitable materials
- authorities' requirements
- manufacturer requirements:
 - containment
 - design and installation
 - installation space
 - material specifications
 - pipe sizing
 - pump installation
 - storage systems
 - technical and trade manuals
 - ventilation
- information gathered through desk top study to support design purposes:
 - architectural and building plans
 - developer plans
 - manufacturer data
 - building applications
 - brochures
 - forms
 - policies
 - reports
- performance requirements to:
 - establish acceptable discharge standards for the relevant authority
 - comply with relevant Australian Standards, codes and local authorities' requirements
- layout of pipework systems:
 - location of pipework (fire rating of enclosure)
 - trade waste plumbing and drainage
 - pumped systems
 - accessibility
 - designing to not unduly affect building integrity and aesthetic appeal
 - designing to include principles of economy, serviceability, durability and fit for use
- fittings:
 - bends
 - junctions
 - reflux valves

- inspection openings
- expansion joints
- solid removal systems which remove:
 - bone
 - dirt
 - grit
 - metal
 - paper
 - plastic
 - rubbish
 - sand
 - silt
 - wood
 - other solid contaminants
- grease and oil interceptors:
 - coalescing plate separators (CPS)
 - vertical gravity separators (VGS)
 - dissolved air flotation (DAF)
 - grease arrestors
 - skimmers
- neutralising chambers which neutralise:
 - acid
 - alkaline
 - chemicals
- wash-down areas:
 - bin
 - commercial and industrial wash-down processes that may or may not require stormwater diversion
 - floor
 - vehicle
 - machinery
- bacterial treatment processes:
 - aerobic
 - anaerobic
 - facultative and specialised bacteria for the removal of grease and other contaminants
- combined and specialised treatment processes:
 - bacterial treatment
 - cooling pits
 - diffused air flotation systems
 - neutralising chambers

- solid removal systems
- specialised treatment
- system calculations:
 - calculating gradient
 - interpreting design charts and tables
 - calculating pipe sizing
 - calculating reduced level
 - determining flow and fixture loadings
 - sizing treatment system
 - storage tank capacity
- pump well, pumps, controls and equipment requirements:
 - access covers
 - automatic controls
 - capacity
 - chains
 - corrosion-resistant materials
 - detailing
 - emergency storage
 - high and low-level water controls and alarms
 - impeller sizing
 - inlet and outlet design requirements
 - installation and mounting requirements
 - ladder access
 - odour control
 - macerator requirements
 - pump selection
 - pump sizing
 - pump well sizing
 - space requirements
 - step irons
 - valve requirements
 - ventilation
 - warning system
- pipe supports:
 - anchors
 - bedding
 - bracket spacing
 - concrete support
 - corrosion protection
 - cover

- hanging brackets
- manufacturer-recommended specific fixings
- material requirements
- saddles
- provision for expansion
- wall and ceiling brackets
- materials:
 - pipes:
 - cast iron or epoxy lined
 - earthenware or vitrified clay pipe (VCP)
 - polyethylene (PE)
 - polypropylene (PP)
 - other approved material
 - fittings and fixtures, including sound attenuation requirements
- jointing methods:
 - electrofusion welding
 - mechanical joints
 - rubber ring
 - threading
- installation requirements:
 - bedding
 - fire rating
 - level of workmanship
 - manufacturer-recommended specific fixings
 - pipe support
 - provision for expansion
 - serviceability and access
 - pipe protection:
 - cover
 - corrosion
 - impact
- computer software packages including:
 - proprietary design software
 - manufacturer software
- methods of applying sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - effect on the environment due to overflow or leakage
 - material selected to convey the type of discharge

- water efficiency
- types of plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - sections
 - schematics produced using:
 - computer generation
 - drawing equipment
- specification:
 - access chambers (manholes)
 - bedding
 - commissioning
 - concrete support and detailing specialised components
 - jointing
 - manufacturer requirements
 - materials
 - pumps
 - WHS
 - support
 - testing
 - workmanship
- testing for:
 - air pressure
 - compliance with authorities' discharge requirements
 - drainage inspection
 - hydrostatic
 - performance
 - quality assurance (QA) audit
- commissioning schedule information:
 - checking for foreign material
 - checking system defects
 - checking that system functions as per design
 - containment
 - leak check
 - operational commissioning
 - pump commissioning
 - system certification

- treatment system commissioning
- operation and maintenance manual information:
 - as installed drawings
 - certification documentation
 - results of commissioning test
 - maintenance schedules
 - manufacturer brochures and technical information
 - odour control
 - regular treatment system maintenance
 - regular water quality testing
 - ventilation
 - water auditing.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5030 Design pump systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPPS5030A Design pump systems.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to undertake the specification, selection and sizing of pumps and the design of associated piping and components for inclusion in hydraulic systems in high-rise mixed development building to a minimum of 29 floors and wide span projects, such as schools.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

The unit requirements are typically carried out by experienced people such as hydraulic design consultants, plumber or persons in a supervisory capacity in relation to plumbing services on a new or existing site.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------|---|
| 1 Evaluate design parameters. | 1.1 Establish scope of work for pump system requirements for wide span and high-rise building projects. |
| | 1.2 Determine design requirements from plans, |

- specifications, system demands and client brief.
- 1.3 Identify statutory and regulatory requirements and Australian Standards and codes for the design of pump systems.
 - 1.4 Apply sustainability principles and concepts as part of the design process.
 - 1.5 Conduct flow and pressure tests of hydraulic system.
 - 1.6 Establish pump duties for the design application.
 - 1.7 Establish performance requirements considering safety of system users or building occupants.
 - 1.8 Interpret manufacturer requirements, trade, sizing and technical manuals.
 - 1.9 Conduct research to outline design parameters.
 - 1.10 Conduct cost-benefit and life cycle analysis to compare a range of pump alternatives, materials and system designs.
- 2 Plan and detail system components.
- 2.1 Size and detail pump, controls and pump room requirements.
 - 2.2 Plan layout of pipework systems including type and location of fittings, valves and controls.
 - 2.3 Calculate pipe sizes, velocities, flows and pressures for applications.
 - 2.4 Specify energy sources for hydraulic pumping applications.
 - 2.5 Plan pump plinths and pump mountings for applications.
 - 2.6 Size and select pump impellers.
 - 2.7 Specify approved materials, jointing methods and installation requirements.
 - 2.8 Provide allowance for vibration.

- | | |
|----------------------------|---|
| 3 Design and size systems. | 3.1 Design pump systems for wide span and high-rise building applications. |
| | 3.2 Evaluate pump acoustic performance. |
| | 3.3 Perform wastewater pump dynamic suction head and flow rate calculations. |
| | 3.4 Apply design principles for optimal performance of pump systems. |
| | 3.5 Design delivery systems for the design application. |
| | 3.6 Design and size pump systems using calculations and computer software packages. |
| | 3.7 Perform domestic water pump flow rate and pressure head calculations. |
| | 3.8 Perform stormwater pump dynamic suction head and flow rate calculations. |
| 4 Prepare documentation. | 4.1 Prepare client brief of the preferred design. |
| | 4.2 Prepare plans and specification details for a range of pump systems. |
| | 4.3 Prepare testing and commissioning schedule. |
| | 4.4 Produce operation and maintenance manual. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5030A Design pump systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5030 Design pump systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5030A Design pump systems.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting water and wastewater pumping systems required for the hydraulic services installation of:
 - a high-rise mixed development building to a minimum of 29 floors, including a basement with fixtures on all levels, and
 - a wide span project (such as a school or industrial complex)
- planning and detailing both system components and include:
 - ancillaries
 - control panel
 - fittings
 - flow switches
 - mounting
 - piping
 - plinths
 - pressure switches
 - pump duty.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- hazards associated with pumping equipment used in hydraulic systems
- key features of work plans and specifications
- approved installation methods for pump systems
- principles of technology in the design of pump installations for hydraulic systems
- research methods
- terminology and definitions used in pump installation
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards

- scope of work:
 - interpretation of plans and specifications
 - sizing and documenting layout of pump systems for wide span and high-rise building projects
- pump types:
 - centrifugal
 - circulating
 - constant flow variable speed
 - macerator
 - multiple stage
 - piston
 - positive displacement
 - submersible
 - vacuum
 - variable speed control
- pump duties:
 - constant pressure
 - flow rate
 - head
 - velocity
- design requirements:
 - acoustic performance
 - architectural plans
 - available flow and pressure from authority's main
 - building specifications
 - fire safety
 - owner's requirements
 - pipework identification
 - pump duty
 - sizing of pipework
 - ventilation
 - vibration
 - viscosity of fluids
- cost-benefit and life cycle analysis:
 - balancing initial cost with durability, longevity, maintenance and ongoing fuel and energy cost requirements
 - comparing the range of suitable materials, pumps and system designs available to enable cost-effective choices to be made without compromising integrity of project
- cost-benefit considerations:
 - design

- energy costs
- expected design life
- labour costs
- material costs
- safety factors
- speed of installation
- suitable materials
- statutory and regulatory requirements which may include Acts and regulations Commonwealth, state or territory and local government requirements
- Australian Standards and codes:
 - AS/NZS 3500 Plumbing and drainage set
 - AS 2419 Fire hydrant installations system design, installation and commission
 - AS/NZS 1547 On-site domestic wastewater management
 - AS 2200 Design charts for water supply and sewerage
 - National Construction Code (NCC)
 - other relevant Australian Standards
- manufacturer requirements:
 - material installation specifications
 - pump tables
 - pipe sizing
 - recommended installation and fixings for pipework
 - technical and trade manuals
 - ventilation requirements
- information gathered during desktop study to support design research:
 - architectural and building plans
 - developer plans
 - manufacturer data
 - applications
 - brochures
 - forms
 - policies
 - reports
- flow and pressure tests which may include on-site measurement of flow (l/s), velocity (m/s) and pressure (kPa)
- performance requirements including flow, velocity, pressure and discharge requirements, to satisfy the requirements of the hydraulic system
- pump, controls and pump room requirements:
 - acoustics
 - ancillaries
 - automatic controls

- inlet and outlet design
- installation and mounting
- plinths
- pump sizing and selection
- space
- ventilation
- vibration
- layout of pipework systems:
 - access
 - identification
 - insulation
 - isolation
 - maintenance
 - principles of economy, serviceability, durability and fit for use
 - replacement
- fittings:
 - bends
 - flanges
 - inlet and outlet pressure gauges
 - tees
 - unions
- valves:
 - air relief
 - excess pressure
 - isolating
 - non-return
 - pressure limiting
 - pressure reduction
 - strainers
 - vibration couplings
- energy sources:
 - diesel and diesel-electric generator sets
 - electrical, single phase and three-phase
 - petrol
- pump plinth bases designed to resist forces exerted by pump:
 - concrete
 - masonry
 - timber
 - steel
- pump mountings:

- anchoring bolts
- inertia pads
- rubber and synthetic
- spring loaded
- vibration mounts
- piping materials:
 - copper (Cu)
 - galvanised steel
 - stainless steel
 - polyethylene (PE)
 - polypropylene (PP)
 - polybutylene (PB)
 - other approved material
- pump materials:
 - cast iron
 - bronze
 - stainless steel
 - other appropriate materials
- jointing methods:
 - brazing
 - electrofusion welding
 - mechanical joints
 - other approved jointing method
- installation requirements:
 - pipe protection:
 - corrosion
 - impact
 - fire rating
 - level of workmanship
 - manufacturer-recommended specific fixings
 - pipe support
 - provision for vibration
 - serviceability and access
 - thrust brackets
- delivery systems:
 - circulation
 - constant flow variable speed pump
 - hydropneumatic
 - lift
 - pressure

- rising main
- vacuum
- methods of applying sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - effect on the environment due to pump or pipe failure
 - pump efficiency
- types of plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - sections
 - schematics produced using:
 - computer generation
 - drawing equipment
- specification:
 - acoustic performance
 - fire safety
 - jointing
 - manufacturer requirements
 - materials
 - pump duty
 - residual pressures
 - WHS
 - specialised components
 - support
 - testing
 - valve selection
 - vibration control
 - workmanship
- testing of:
 - defect inspection
 - hydrostatic
 - performance
 - quality assurance (QA) audit
- commissioning schedule information:
 - system certification

- exhaust pipe check
- flow check
- leak check
- pressure check
- system purge
- system defects
- system functions as per design
- valve operation
- acoustic performance
- operation and maintenance manual information:
 - as installed drawings
 - results of commissioning test
 - certification documentation
 - emergency shutdown procedures
 - maintenance schedules
 - manufacturer brochures and technical information
 - valve function.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5032 Design siphonic stormwater drainage systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5032A Design siphonic stormwater drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design siphonic stormwater drainage systems, determine installation details, and prepare specifications for a range of residential, commercial and industrial buildings.

The role involves interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

The unit requirements are typically carried out by experienced people such as hydraulic design consultants or persons in a supervisory capacity in relation to plumbing services on a new or existing site.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Evaluate design parameters.

1.1 Establish scope of work for siphonic stormwater drainage systems.

1.2 Determine design parameters from relevant statutory and regulatory requirements, codes, plans, specifications and

- client brief.
- 1.3 Establish performance requirements considering safety of system users or building occupants.
 - 1.4 Apply sustainability principles and concepts as part of the design process.
 - 1.5 Interpret stormwater design manuals, manufacturer requirements and trade and technical manuals
 - 1.6 Conduct additional research, including a desktop study, to outline design parameters.
 - 1.7 Determine factors that contribute to quality, safety and time efficiency.
 - 1.8 Evaluate siphonic system attributes and conduct cost-benefit analysis, comparing a range of pipe materials and system designs.
- 2 Plan and detail system components.
- 2.1 Integrate siphonic stormwater drainage systems with the building structure.
 - 2.2 Calculate volume of roof water and stormwater using approved methods.
 - 2.3 Plan layout of pipework systems including type and location of fittings.
 - 2.4 Calculate pipe size and flow requirements for applications according to stormwater collection requirements.
 - 2.5 Plan pipe supports for applications.
 - 2.6 Specify approved materials and components, jointing methods and installation requirements for siphonic stormwater drainage systems.
- 3 Design and size systems.
- 3.1 Design siphonic stormwater drainage systems for applications.
 - 3.2 Calculate catchment areas, determine collection points and size siphonic systems.

- 3.3 Design and size siphonic stormwater drainage systems using calculations and computer software packages.
- 4 Prepare documentation.
 - 4.1 Prepare client brief of the preferred design.
 - 4.2 Prepare plans and specification for siphonic stormwater drainage systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual, including information on how to properly and safely maintain the system.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5032A Design siphonic stormwater drainage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5032 Design siphonic stormwater drainage systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5032A Design siphonic stormwater drainage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout details, including a specification for two siphonic stormwater drainage system that include:
 - a site incorporating a high-rise mixed development building
 - a wide span project (such as a large bulk goods warehouse)
- preparing documentation which includes:
 - evaluation and details of design parameters relevant to codes and manufacturer requirements for siphonic stormwater drainage systems
 - evaluation of health risks associated with the siphonic system
 - materials and components that are compliant, fit for purpose, durable, compatible and cost-effective.
-

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- common terminology and definitions used in the design of siphonic stormwater drainage systems for residential, commercial and industrial buildings
- drafting principles
- nature of materials used and effects of performance under various conditions
- procedures for estimating volume of stormwater run-off from rainwater collection areas
- principles of technology in the design of siphonic stormwater drainage systems
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - calculation of rainfall intensities in given catchment areas:
 - average rainfall intervals

- meteorological information
- rainfall intensities
- stormwater collection area calculations
- time and concentration
- interpretation of plans and specifications
- sizing and documenting layout of siphonic stormwater drainage systems for residential, commercial and industrial applications
- design requirements:
 - owner requirements
 - architectural plans
 - building specifications
 - pipework identification
 - catchment area
 - approved point of discharge
 - acoustic performance
- siphonic system attributes:
 - availability
 - cost
 - installation requirements
 - risks
 - site conditions
- cost–benefit analysis to enable cost-effective choices to be made without compromising integrity of project:
 - design styles
 - expected design life
 - labour costs
 - material costs
 - safety factors
 - speed of installation
- statutory and regulatory requirements and relevant Australian Standards and codes:
 - AS/NZS 3500 Plumbing and drainage set
 - AS 2200 Design charts for water supply and sewerage
 - Geberit or equivalent approved siphonic drainage system design criteria
 - Commonwealth, state or territory requirements and local governments requirements
 - National Construction Code (NCC)
 - other relevant Australian Standards and codes
- manufacturer requirements:
 - material specifications
 - sizing tables
 - technical and trade manuals

- special siphonic drainage collection inlets
- information gathered during desktop study:
 - architectural and building plans
 - manufacturer data
 - developer plans
 - applications
 - brochures
 - forms
 - policies
 - reports
- performance requirements, including pipe flow velocities, flow conditions and discharge requirements established using relevant Australian Standards, codes and local authorities' requirements
- layout of pipework systems:
 - acoustic performance
 - amenity of the building
 - clipping and pipe support
 - fireproofing
 - function of the building
 - impingement on floor heights
 - location of pipework (fire rating of enclosure)
 - materials to be used
 - size of penetrations
 - type of building structure
 - principles of economy, serviceability, durability and fit for use
 - design which does not unduly affect building integrity and aesthetic appeal
- fittings:
 - bends
 - junctions
- pipe size and flow requirement calculations:
 - discharge
 - flow
 - manufacturers' tables
 - sizing, according to relevant Australian Standards and codes
 - velocity
 - volumes
- pipe supports:
 - anchors
 - bracket spacing
 - corrosion protection

- cover
- hanging brackets
- material requirements
- saddles
- wall and ceiling brackets
- acoustic resilient mounts
- appropriate materials specified, based on fit for purpose, durability, compatibility and cost-effectiveness:
 - copper (Cu)
 - polyethylene (PE)
 - polypropylene (PP)
 - stainless steel
 - other approved material
 - clips
 - fasteners
 - fittings
 - pipework
 - siphonic collection inlets
- jointing methods:
 - brazing
 - electrofusion welding
 - mechanical joints
 - rubber ring
 - other approved jointing methods
- installation requirements:
 - fire rating
 - level of workmanship
 - manufacturer-recommended specific fixings
 - pipe support
 - provision for expansion
 - serviceability and access
 - pipe protection:
 - corrosion
 - impact
- computer software packages:
 - manufacturer software
 - proprietary design software
- methods of applying sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material

- efficient energy usage/capital outlay comparison
- effect on the environment due to overflow or leakage
- consideration of the Green Building Council of Australia rating scheme
- types of plans:
 - axonometrics
 - elevations
 - details
 - cross-sections
 - isometrics
 - schematics
 - sections
- plans produced using:
 - computer generation
 - drawing equipment
- specification:
 - commissioning
 - bedding
 - support
 - jointing
 - manufacturer requirements
 - materials
 - testing
 - workmanship
 - WHS
- testing:
 - hydrostatic test
 - inspection
 - performance
 - quality assurance (QA) audit
- commissioning schedule information:
 - system certification
 - checking for foreign material
 - checking leaks
 - cleaning grates
 - system defects
 - system functions as per design
- operation and maintenance information:
 - as installed drawings
 - certification documentation
 - results of commissioning test

- maintenance schedules
- manufacturer brochures and technical information
- check for blockages
- leak detection
- regular inspection
- regular maintenance requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPPS5033 Design vacuum drainage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Removed duplicated heading from Performance Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5033A Design vacuum sewerage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design vacuum drainage systems, determine installation details, and prepare specifications for 50 residential properties and industrial high-rise mixed development buildings with a minimum of 29 floors using proprietary components.

This unit relates to work in a consultancy or supervisory capacity in relation to plumbing services and hydraulics on a new or existing site.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPDR3025 Plan layout and install vacuum drainage systems

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------|---|
| 1 Evaluate design parameters. | 1.1 Establish scope of work for vacuum drainage systems designed for vacuum sewer infrastructure systems and high-rise building projects. |
|-------------------------------|---|

- 1.2 Determine design requirements from relevant Australian Standards, codes, plans, specifications and client brief.
 - 1.3 Evaluate vacuum drainage system attributes and conduct a cost–benefit analysis comparing a range of pipe materials and system designs.
 - 1.4 Interpret, analyse and apply statutory and regulatory requirements, including relevant Australian Standards and codes for the design of vacuum drainage systems.
 - 1.5 Obtain trade and technical manuals and interpret manufacturer requirements for the design of vacuum sewer infrastructure systems.
 - 1.6 Conduct additional research including a desktop study to outline design parameters.
 - 1.7 Determine factors that contribute to quality, safety and time efficiency.
 - 1.8 Establish performance requirements considering safety of system users or building occupants.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems including the type and location of fittings, valves and controls.
 - 2.2 Calculate vacuum loading units (VLU) using equivalent population (EP) density for a residential development in excess of 50 dwellings in accordance with the National Construction Code (NCC) for a high-rise project with a minimum of 29 floors.
 - 2.3 Perform pipe size calculations for applications according to regulations and manufacturer requirements.
 - 2.4 Design pipe supports for applications.
 - 2.5 Size and detail vacuum pumping station and pump control requirements.
 - 2.6 Specify approved materials, jointing methods and installation requirements for vacuum drainage systems.
 - 2.7 Determine approved point of discharge to the authority’s main.

- 2.8 Identify acoustic performance of the system and document in the plan.
- 3 Design and size systems.
 - 3.1 Design vacuum drainage system for residential, commercial and industrial building applications.
 - 3.2 Design and size vacuum drainage system using EP density calculations and in accordance with NCC.
 - 3.3 Apply sustainability principles and concepts throughout the design process.
- 4 Prepare documentation.
 - 4.1 Prepare and document client brief of the desired design in accordance with workplace procedures.
 - 4.2 Prepare plans and specifications vacuum drainage systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual including information on how to properly and safely maintain the system.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPPS5033A Design vacuum sewerage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPPS5033 Design vacuum drainage systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Removed duplicated heading from Performance Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5033A Design vacuum sewerage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the installation and layout details for a vacuum infrastructure sewer system for:
 - a residential development of 50 properties incorporating:
 - vacuum sewage collection chambers
 - vacuum sewer mains
 - vacuum pump station
 - pump rising main
 - ventilation
 - odour control
 - a high-rise mixed development building, to a minimum of 29 floors, inclusive of a basement, to include fixtures on each floor level, incorporating:
 - vacuum pump station
 - vacuum sanitary drainage system
 - pump rising main
 - ventilation
 - odour control
- applying sustainability principles and concepts throughout to achieve a star rating under the Green Building Council of Australia rating scheme
- evaluating and documenting design parameters, including client, regulatory and manufacturer requirements and relevant Australian Standards and codes complex sanitary plumbing and drainage systems
- evaluating health risks associated with the sanitary plumbing and drainage system

- selecting materials and components for compliance, fitness for purpose, durability, compatibility and cost-effectiveness.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- common terminology and definitions used in the design of vacuum drainage systems
- application of statutory and regulatory requirements and relevant Australian Standards and codes including:
 - Acts, regulations and Commonwealth, state or territory and local government policies
 - AS/NZ 3500 National plumbing and drainage
 - AS 2200 Design charts for water supply and sewerage
 - Environmental Protection Authority (EPA)
 - National Construction Code (NCC)
 - Sewerage Code of Australia
 - other relevant Australian Standards and codes
- scope of work requirements:
 - interpreting plans and specifications
 - sizing and documenting layout of vacuum drainage systems including residential, commercial and industrial
- design requirements:
 - acoustic performance
 - architectural plans
 - building specifications
 - fire safety requirements
 - flow requirements and sizing of pipework
 - odour control
 - owner requirements
 - pipework identification
 - Sewerage Code of Australia
 - vacuum pumping station
 - ventilation requirements
- cost-benefit analysis comparing suitable materials and system choices available to enable cost-effective choices without compromising the integrity of the project
- nature of materials used and effects of performance under various conditions:
 - copper (Cu)
 - polyethylene (PE)
 - polypropylene (PP)
 - polyvinyl chloride (PVC)
 - stainless steel
 - other approved material

- manufacturer requirements:
 - material specifications
 - collection and storage systems
 - design and installation
 - equipment installation
 - pump installation
 - selection of compatible sanitary fixtures
 - technical manuals
- manufacturer specifications, including hazards identified in relation to devices and systems used
- information required to conduct a desktop study to outline design parameters:
 - architectural and building plans
 - developer plans
 - manufacturer data
 - other documents relevant to designing vacuum sewerage systems
- characteristics and application of different jointing methods
- vacuum drainage system attributes:
 - availability
 - cost
 - flexibility
 - installation requirements
 - low water usage
 - risks
 - vacuum loading units (VLU)
 - site conditions
- performance requirements of vacuum drainage system:
 - discharge requirements
 - durability
 - emergency storage and/or power backup
 - longevity
 - self-cleaning ability
 - sufficient capacity
- layout of pipework systems:
 - sewer infrastructure systems:
 - cover
 - grade
 - location of vacuum pump station
 - location of vacuum sewage collection chambers
 - odour control
 - pipe access

- ventilation
- high-rise building projects:
 - acoustic performance
 - amenity of the building
 - clipping and pipe support
 - location of pipework (fire rating of enclosure)
 - function of the building
 - impingement on floor heights
 - materials to be used
 - size of penetrations
 - type of building structure
- effect on building integrity and aesthetic appeal
- principles of economy, serviceability, durability and fit for use
- installation requirements:
 - acoustic performance
 - bedding
 - pipe protection:
 - cover
 - corrosion
 - impact
 - grade
 - level of workmanship
 - fire rating
 - manufacturer-recommended specific fixings
 - pipe support
 - provision for pipe movement
 - serviceability and access
- pipe size calculations including:
 - determining flow and fixture loadings
 - equivalent population (EP) density
 - calculating gradient
 - interpreting design charts and tables
 - determining self-cleaning velocities
 - manufacturer requirement
 - probable simultaneous demand
- uses and limitations for pipe supports:
 - bedding
 - bracket spacing
 - concrete support
 - corrosion protection

- cover
- hanging brackets
- manufacturer-recommended specific fixings
- material requirements
- provision for expansion
- thrust blocks
- wall and ceiling brackets
- vacuum pumping station and pump control requirements:
 - access covers
 - automatic controls
 - capacity
 - corrosion-resistant materials
 - detailing
 - emergency storage
 - emergency power supply
 - high and low-level water controls and alarms
 - impeller sizing
 - inlet and outlet design requirements
 - installation and mounting requirements
 - macerator requirements
 - odour control
 - pneumatic control switch assembly
 - pump selection
 - pump sizing
 - pump well sizing
 - space requirements
 - vacuum pump systems
 - valve requirements
 - ventilation
 - warning system
- characteristics and application of different fittings, valves and controls:
 - fittings:
 - bends
 - elbows
 - inspection and maintenance access
 - tees
 - unions
 - valves:
 - backflow prevention
 - isolating

- non-return
- strainers
- vacuum diaphragm valve
- controls:
 - pneumatic control switch assembly
 - vacuum pressure sensing
 - motorised actuated valves
 - vacuum management system
- the use and limitations of computer software packages including manufacturer and proprietary design software
- plans and specifications requirements:
 - plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - schematics
 - site
 - sections
 - specifications:
 - access chambers (manholes)
 - bedding
 - commissioning
 - concrete support and detailing specialised components
 - jointing
 - manufacturer requirements
 - materials
 - odour control
 - pump rising main
 - work health and safety (WHS)
 - selection of compatible vacuum sanitary fixtures
 - support
 - testing
 - vacuum pump station
 - vacuum drainage collection chambers
 - vacuum sewer mains
 - ventilation
 - workmanship
- testing methods:

- compressed air test
- flow testing
- hydrostatic test
- inspection checklist
- performance
- vacuum
- quality assurance (QA) audit
- commissioning schedule requirements:
 - system certification
 - check for foreign material
 - leak check
 - emergency procedures
 - system defects
 - system functions as per design
- operation and maintenance manual requirements:
 - as installed drawings
 - results of commissioning test
 - certification documentation
 - maintenance schedules
 - manufacturer brochures and technical information
 - operating procedures
- sustainability principles and concepts:
 - selecting appropriate material to ensure minimal environmental impact
 - efficient use of material
 - efficient energy usage/capital outlay comparison
 - positive effect on the environment in regard to no potential overflow or leakage
 - water efficient
 - consideration of the Green Building Council of Australia rating scheme
 - local environment consideration overflow disposal/reuse.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF2022 Select and install roof sheeting and wall cladding

Modification History

Release 2	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1. Typographical error corrected in Element 5 and Performance Evidence reformatted for clarity.
Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is not equivalent to CPCPRF2022A Select and install roof sheeting and wall cladding, and CPCPRF3021A Receive roofing materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge to select and install insulation, roof battens and wall cladding involving metallic, non-metallic or other approved roof covering materials.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM2055 Work safely on roofs

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1	Identify installation	1.1	Access, read and determine roof sheeting and wall
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- requirements. cladding installation requirements from job specifications, relevant Australian Standards, codes, manufacturer's instructions and jurisdictional requirements.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.
 - 1.3 Identify whether materials to be used are compatible with the surrounding environment and other materials within the installation.
 - 1.4 Determine material types and calculate quantities from plans and specifications.
 - 1.5 Identify roof insulation and wall cladding to meet thermal, acoustic, moisture and bushfire control requirements.
 - 1.6 Identify safety mesh requirements to support the installation requirements.
- 2 Receive delivery of materials.
- 2.1 Provide safe access for delivery vehicles and on-site workers.
 - 2.2 Determine and provide adequate load support at the point of delivery and assist in the unloading and transfer of materials.
 - 2.3 Check conformity of materials against the delivery docket and specifications and report any shortfalls or damage.
 - 2.4 Secure materials and protect from moisture and mechanical damage.
- 3 Prepare for work.
- 3.1 Identify and check condition of plant, equipment and tools required for the installation.
 - 3.2 Select, fit and use appropriate personal protective equipment (PPE).
 - 3.3 Check fall protection system is in place and secure.

- | | | | |
|---|------------------------|-----|--|
| 4 | Install roof sheeting. | 4.1 | Perform installation and fix selected insulation ensuring acoustic, thermal, moisture and bushfire control. |
| | | 4.2 | Measure, cut and fix roof battens for the installation at correct spacings to match plans. |
| | | 4.3 | Measure, cut, weather and install roof sheets using appropriate fastening spacings and methods. |
| | | 4.4 | Remove swarf end of installation. |
| | | | |
| 5 | Install wall cladding. | 5.1 | Perform installation and fix selected insulation ensuring acoustic, thermal, moisture and fire control. |
| | | 5.2 | Measure, cut and fasten battens at correct spacings to match plans. |
| | | 5.3 | Measure, cut and install wall cladding and flashings using appropriate fastening spacing and methods. |
| | | 5.4 | Install thermal breaks as required. |
| | | | |
| 6 | Clean up. | 6.1 | Remove swarf off cladding, flashings and gutter and clear any rivet stems and fasteners. |
| | | 6.2 | Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | | 6.3 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPRF2022A Select and install roof sheeting and wall cladding, and CPCPRF3021A Receive roofing materials.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF2022 Select and install roof sheeting and wall cladding

Modification History

- | | |
|-----------|---|
| Release 2 | <p>This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.</p> <p>Typographical error corrected in Element 5 and Performance Evidence reformatted for clarity.</p> |
| Release 1 | <p>This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.</p> <p>Supersedes and is not equivalent to CPCPRF2022A Select and install roof sheeting and wall cladding, and CPCPRF3021A Receive roofing materials. Updated to meet the Standards for Training Packages 2012.</p> |

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- installing steel claddings to structures not less than 2 metres wide and 1.5 metres long including:
 - a flat deck roof system to a pitch $\geq 1^\circ$ using concealed fixing method and installing safety wire mesh, blanket and foil
 - a pitched roof system $\geq 5^\circ$ using an approved pierced fixing method and incorporating:
 - a valley, hip, ridge and barge
 - thermal insulation containing a blanket and foil for fire management
 - a non-structural cladded roof over rigid support using concealed fixing method including valley, hip, ridge, barge and roof discharge detail and moisture control pliable membrane
 - a sandwich panel roof or wall over supports using pierced fixing method with a minimum of two panels
 - a non-metallic roof sheet using pierced fixing and installing safety wire mesh
 - wall cladding incorporating side lapping with one external and internal corner and toe mould and including:
 - an opening of 300 x 600 mm
 - pliable building membrane.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- reading and interpreting plans, including electronic plans
- current standards and codes for roof sheeting and insulation:
 - HB39 Installation Code for metal roof and wall cladding
 - National Construction Code (NCC)
 - AS 1562 Design and installation of sheet roof and wall cladding
 - AS 4200.2 Pliable building membranes and underlays - Installation
 - AS 3999 Bulk thermal insulation - Installation
- calculation of material quantities
- receipt, storage, protection and checking quantities for delivery of roofing materials
- roof components:
 - insulation to meet thermal acoustic, moisture and fire control
 - safety mesh
 - rigid supports
 - roof and safety battens
 - fixings and fasteners
 - metal and non-metallic roofing sheets
 - sandwich panel
 - thermal breaks and approved sealants
- capillary action and thermal expansion
- corrosion control
- weathering
- unloading and storage of roof materials following manufacturers' instructions:
 - stacking dunnage
 - environmental protection
- conformity of materials against the delivery docket
- work health and safety (WHS) requirements:
 - working at heights
 - fragile materials
 - asbestos containing materials
 - selecting and installing roof sheeting and wall cladding
- overhead hazards
- installation in bushfire prone areas and requirements of The National Association of Steel-Framed Housing (NASH) Standard for construction in bushfire areas or AS 3959 *Construction of buildings in bushfire-prone areas*
- how to access relevant information, including codes and standards
- tools, materials and equipment used to select and install roof sheeting and wall cladding.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF2023 Collect and store roof water

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCPRF2023A Collect and store roof water. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to collect and store roof water. It includes installing storage tanks and related piping for the collection and storage of roof water.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify water storage system requirements.	1.1 Access, read and determine water storage installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. 1.2 Obtain, interpret and follow workplace, work health and safety (WHS) and environmental requirements.
2 Plan and prepare for	2.1 Create a materials list and collect materials.

- installation.
- 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Install storage system.
- 3.1 Prepare the worksite including installation of tank stand or base according to specifications, minimising damage to surrounding structures or existing services.
- 3.2 Install inlet connections and relevant flushing devices to gutters, incorporating leaf catchers and downpipes into the storage tank.
- 3.3 Connect storage tank overflow to an approved stormwater point of discharge.
- 3.4 Perform and review installation of storage tank according to job specification and current statutory and regulatory authority requirements.
- 4 Clean up.
- 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
- 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPRF2023A Collect and store roof water.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF2023 Collect and store roof water

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCPRF2023A Collect and store roof water.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- installing a water tank to collect and store water from a roof catchment area
- installing a tank stand or supporting base
- installing a storage tank of not less than 500 litres' capacity
- installing inlet connection and a first flush device connected to a gutter and incorporating a leaf catcher and downpipe to direct rainwater into the storage tank
- connecting the storage tank overflow to an approved stormwater point of discharge.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- procedures for commissioning water storage tanks for use
- characteristics of materials and components of authorised materials that comply with local authority requirements:
 - brackets and supports
 - metal guttering
 - polyvinyl chloride (PVC)
 - sealants, adhesives and fasteners
 - tank stands
- properties of water:
 - effect of gravity and atmospheric pressure
 - procedures for maintaining water quality
 - sources of contamination and impurities
- regulations and identification requirements pertaining to collecting and storing drinking water and non-drinking water
- how to access relevant information, including codes and standards
- tools, materials and equipment used to collect and store roof water

- work health and safety (WHS) requirements for collecting and storing roof water.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF2024 Fabricate roof coverings for curved structures

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element and Performance Criteria 3.4.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPRF2024A Fabricate roof coverings for curved structures. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design and fabricate curved industrial roof coverings.

It covers drawing fabrication patterns based on sketches of roof coverings, calculating curve dimensions and selecting roofing materials for new or existing, domestic or commercial structures.

The unit is suitable for people with basic skills and knowledge who undertake routine work tasks under the direction of more experienced workers.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Determine requirements roof coverings to be designed |
|---------------------|--|

- and fabricated based on plans and specifications.
- 1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements and sustainability principles associated with fabricating roof coverings for curved structures.
 - 1.3 Consult with relevant personnel to plan and sequence tasks.
 - 1.4 Prepare work area to support efficient fabrication of roof coverings.
- 2 Identify installation requirements.
- 2.1 Select roofing material that is suitable for the fabrication process, job requirements and relevant information.
 - 2.2 Ascertain curvature of roof covering and use to determine the starting and finishing points of curves.
 - 2.3 Create design and freehand sketch of the roof covering to form the basis of fabrication patterns.
 - 2.4 Draw fabrication patterns based on design and freehand sketch of roof covering.
- 3 Fabricate covering.
- 3.1 Determine material list from patterns and calculations.
 - 3.2 Determine method of fabrication, tools and machinery for fabrication to suit job requirements.
 - 3.3 Select and check the serviceability of the appropriate tools, equipment and PPE reporting any faults according to workplace procedures.
 - 3.4 Mark out and fabricate roof covering according to drawings, patterns or calculations.
 - 3.5 Access information to complete documentation according to workplace procedures and submit within specified timeframes.
- 4 Clean up.
- 4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures.

- 4.2 Clean tools and equipment, check for serviceability reporting any damage, store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPRF2024A Fabricate roof coverings for curved structures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF2024 Fabricate roof coverings for curved structures

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Typographical error corrected in Element and Performance Criteria 3.4.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPRF2024A Fabricate roof coverings for curved structures. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing and fabricating the curved roof coverings of a bull nosed verandah incorporating one internal and one external angle.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- capillary action, thermal expansion and fabrication techniques to prevent leaking installations
- characteristics of various metals and finishes
- uses and limitations of materials:
 - drawing materials
 - manufacturer catalogues and specifications
 - metal roof sheeting of concealed or fixed type and accessories
- design concepts and performance measures for curved roof covering including
- electrolysis and problems associated with the use of dissimilar metals
- job safety environmental analysis (JSEA) and safe work method statements (SWMSs)
- processes of designing and fabricating curved roof coverings:
 - barrel shaped
 - concave
 - convex
 - hyperbolic

- paraboloid
- processes for accessing information relevant to designing and fabricating roof coverings:
 - charts and hand drawings
 - instructions issued by authorised organisational or external personnel
 - manufacturer specifications and instructions
 - safety data sheets (SDSs)
 - memos
 - organisation work specifications and requirements
 - plans and sketches
 - regulatory and legislative requirements, particularly those pertaining to:
 - building codes
 - WHS and environmental requirements
 - plumbing regulations
 - relevant Australian standards
 - safe work procedures relating to the design, and fabrication of coverings for curved roofs
 - signage
 - verbal, written and graphical instructions
 - work bulletins
 - work schedules, plans and specifications.
- different types of tools and equipment, their application and method of operation:
 - drafting equipment
 - hand and power tools
 - lifting and load shifting equipment
 - machinery for shaping the roof material
 - measuring equipment
- processes for reporting faults according to company's workplace procedures this includes both written and verbal
- statutory and regulatory authorities:
 - Commonwealth government
 - state or territory governments
 - local authorities
- SI system of measurements
 - safe work practices associated with designing and fabricating roof coverings for curved structures:
 - handling of materials
 - hazard control
 - personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
 - recognising and preventing hazards associated with:

- electricity
- hazardous materials and substances
- service lines
- surrounding structures and facilities
- trip hazards
- use of tools and equipment
- work site visitors and the public
- working at heights
- working in proximity to others
- use of firefighting equipment
- use of first aid equipment
- workplace environment and safety
- environmental requirements and sustainability principles and concepts:
 - clean-up protection
 - stormwater protection
 - waste management
 - efficient energy
 - efficient use and recycling of material
 - disposing of waste material to ensure minimal environmental impact
 - selecting appropriate components to ensure minimal environmental impact.
- quality assurance requirements:
 - Environment Protection Authority (EPA)
 - internal company quality assurance policy and risk management strategy
 - International Standards Organisation (ISO)
 - site safety plan
 - workplace operations and procedures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF3021 Receive roofing materials

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Correction to prerequisite unit code from *CPCPCM2043A Carry out WHS requirements* to *CPCPCM2043 Carry out WHS requirements*.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPRF3021A Receive roofing materials. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to coordinate the delivery, receipt and handling of roofing materials on a site.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|---|
| 1 Prepare for work. | 1.1 Obtain and confirm plans and specifications by site visit. |
| | 1.2 Adhere to work health and safety (WHS) and environmental requirements and materials handling throughout the work. |
| | 1.3 Identify and adhere to quality assurance requirements according to workplace requirements. |
| | 1.4 Select and check tools and equipment, including personal |

- protective equipment (PPE) and barricades and signs, for serviceability.
- 1.5 Prepare work area to support efficient receipt of roofing materials.
- 2 Plan delivery.
- 2.1 Interpret plans, specifications, material quantity details and other relevant information to determine amount and type of material to be delivered to site.
- 2.2 Inspect site to determine capacity, identify risks and hazards, and identify load-handling methods and techniques.
- 2.3 Obtain spot load limits on roof frame structure from structural engineer.
- 2.4 Sequence loads according to job requirements and work site capacity.
- 2.5 Place orders specifying items, quantities and sequence of delivery of each load.
- 2.6 Plan and sequence deliveries in conjunction with others involved in or affected by their arrival.
- 3 Receive delivery of materials.
- 3.1 Inform employees of delivery process.
- 3.2 Clear and provide access to site for crane and other support vehicles and equipment.
- 3.3 Prepare delivery sites and spot load sites and material securing equipment.
- 3.4 Position safety barricades and signs.
- 3.5 Move loads from delivery vehicle to spot load positions or other determined site location.
- 3.6 Cover and secure loads to prevent damage according to standards and manufacturer requirements, and report faults.
- 3.7 Apply sustainability principles and concepts when preparing for and undertaking work process.

- 4 Clean up.
 - 4.1 Remove safety barricades and signs.
 - 4.2 Clear work area and dispose of, re-use or recycle materials according to legislation, regulation, codes of practice and job specification.
 - 4.3 Clean, check, maintain and store tools and equipment according to manufacturer recommendations and workplace procedures.
 - 4.4 Complete documentation according to workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPRF3021A Receive roofing materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF3021 Receive roofing materials

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- Correction to prerequisite unit code from CPCPCM2043A Carry out WHS requirements to CPCPCM2043 Carry out WHS requirements.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPRF3021A Receive roofing materials. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- assessing roofing material requirements from the plans and specifications of a roofing project
- locating, interpreting and applying relevant information, standards and specifications to receiving roofing materials
- sequencing material delivery to correspond with a planned construction project
- receiving the materials (including the location of spot points) and securing arrangements, ensuring:
 - application of sustainability principles and concepts
 - correct identification of requirements and details of their delivery
 - correct selection and use of appropriate processes, tools and equipment
 - completing all work to specification
 - compliance with safety regulations, standards and organisational quality procedures and processes
 - communicating and working effectively and safely with others.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- work health and safety (WHS), Commonwealth, state and territory legislation and regulations relating to:
 - handling of materials
 - hazard control

- personal protective equipment (PPE) prescribed under legislation, regulations and workplace policies and practices
- safe operating procedures, including recognising and preventing hazards associated with:
 - electricity
 - hazardous materials and substances
 - lifting and placement of loads
 - service lines
 - surrounding structures and facilities
 - trip hazards
 - use of tools and equipment
 - work site visitors and the public
 - working at heights
 - working in proximity to others
 - use of firefighting equipment
 - use of first aid equipment
 - workplace environment and safety
- tools and equipment:
 - barricades and signage
 - fall protection equipment
 - ladders
 - lifting and load shifting equipment, including:
 - chain blocks
 - elevated work platforms (EWPs)
 - forklifts
 - hand trolleys
 - hoists and jacks
 - restricted height scaffolds
 - rollers
- materials:
 - blanket and batt types
 - industrial roof components
 - laminate
 - metal rainwater products
 - metal roof covers of concealed or pierce fixed types
 - metal self-drilling and tapping screws
 - plastic building sheets for walls and roofs
 - prefabricated roofing components
 - rainwater goods
 - rivets and sealants (silicon and solder)

- thermal insulation of reflective foil
- information:
 - charts and hand drawings
 - instructions issued by authorised organisational or external personnel
 - manufacturer specifications and instructions
 - safety data sheets (SDS)
 - memos
 - organisation work specifications and requirements
 - plans and sketches
- regulatory and legislative requirements:
 - building codes
 - WHS and environmental requirements
 - plumbing regulations
 - relevant Australian standards
 - safe work procedures relating to receiving roofing materials
 - signage
 - verbal, written and graphical instructions
 - work bulletins
 - work schedules, plans and specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF3022 Fabricate and install roof drainage systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPRF3022A Fabricate and install roof drainage components. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to fabricate and install roof drainage systems and associated rainwater components.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM2055 Work safely on roofs

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.

1.1 Access, read and determine roof drainage system installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.

1.2 Identify and apply workplace, work health and safety (WHS) and environmental and sustainability

- requirements.
- 1.3 Calculate material quantities from plans and specifications.
 - 1.4 Draw fabrication pattern based on plans and specifications as required.
 - 1.5 Determine type and size of gutters, downpipes and support system from plans and specifications and to comply with relevant Australian Standards.
 - 1.6 Confirm materials are compatible with the roof in accordance with workplace procedures.
- 2 Prepare for work.
- 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).
 - 2.3 Identify materials and equipment required to complete work tasks.
 - 2.4 Inspect access to roof work area and ensure fall protection equipment is in place if required.
- 3 Fabricate roof drainage components.
- 3.1 Mark out material according to pattern drawings or plans and specifications.
 - 3.2 Perform fabrication of roof drainage component in accordance with current Australian Standards and manufacturers' instructions.
 - 3.3 Fasten and seal the roof drainage component to comply with current Australian Standards and manufacturers' instructions if required.
- 4 Install roof drainage components.
- 4.1 Set out the location of roof drainage components according to plans and specifications.
 - 4.2 Install the support system to suit the roof drainage component if required.
 - 4.3 Install the roof drainage component in accordance with current Australian Standards and manufacturers'

instructions.

- 5 Clean up.
 - 5.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPRF3022A Fabricate and install roof drainage components.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF3022 Fabricate and install roof drainage systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPRF3022A Fabricate and install roof drainage components. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by using metal to fabricate and install:

- a valley gutter
- a fascia, including one internal and one external angle, that is attached to an approved support system and a minimum of three metres in length
- an eaves gutter, including:
 - gutter support system
 - nozzle
 - stop end
 - internal and external angle
 - fall
 - overflow measure
 - expansion allowance
- a downpipe, including:
 - offset
 - spreader
 - fixings
- a box gutter, including:
 - overflow measures
 - sump or rainwater head
 - expansion allowance
 - gutter support system
 - ridged support
 - fasteners and sealants.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- current standards and codes for roof drainage systems:
 - National Construction Code (NCC)
 - AS/NZS 3500 Plumbing and drainage Set
 - HB39 Installation code for metal roof and wall cladding
- types and sizes of gutters, downpipes and support system
- installation requirements:
 - appropriate falls
 - pitches
 - overflow measures
 - support and fixings
 - cross-sectional area
 - expansions allowances
 - environmental conditions
 - approved sealants and fixings
 - capillary action
 - electrolysis
- tools, materials and equipment used to fabricate and install roof drainage systems
- work health and safety (WHS) requirements for fabricating and installing roof drainage systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF3023 Fabricate and install external flashings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPRF3023A Fabricate and install external flashings. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to fabricate and install external flashings.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM2055 Work safely on roofs

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------|--|
| 1 Prepare for work. | 1.1 Access, read and determine installation requirements and methods from relevant plans, specifications, current codes, Australian Standards and manufacturers' instructions. |
| | 1.2 Check that the materials used are compatible with the surrounding environment and other materials associated |

- within the installation.
- 1.3 Identify, interpret and follow workplace policies and procedures, work health and safety (WHS), environmental and sustainability requirements associated with the fabrication and installation of external flashings.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others onsite.
 - 1.5 Identify potential hazards and determine and implement control measures and personal protective equipment (PPE) requirements.
 - 1.6 Check fall protection system is in place and secure.
 - 1.7 Select and check serviceability of appropriate tools, equipment and PPE.
- 2 Identify installation requirements.
 - 2.1 Locate external flashings to be installed from relevant working drawings, plans, specifications, site measurements, codes, Australian Standards and manufacturers' instructions.
 - 2.2 Locate and select materials required for the installation.
 - 2.3 Order and receive required materials and equipment according to workplace requirements.
 - 2.4 Check materials and equipment against the docket and order form for correct product, compliance with Australian Standards and acceptable condition and action discrepancies according to workplace requirements.
 - 3 Fabricate and install external flashings.
 - 3.1 Fabricate external flashings ensuring compliance with relevant working drawings, plans, specifications, site measurements, codes, Australian Standards and manufacturers' instructions.
 - 3.2 Install external flashings using appropriate fastening and sealing methods.
 - 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation

and workplace requirements.

- 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPRF3023A Fabricate and install external flashings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF3023 Fabricate and install external flashings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPRF3023A Fabricate and install external flashings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- measuring site for external flashings with appropriate angles, cover and cutting allowance for fabrication
- fabricating and installing roof flashings to include:
 - an apron, parapet, soaker, hanging or barge with two flashings:
 - that are a minimum length of 600 mm
 - one with an external angle and one with an internal angle
 - a roll top ridge and hip junction capping with three flashings that are each a minimum length of 600 mm
 - hip or barge termination at eave with one flashing that is a minimum length of 600 mm.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- capillary action, thermal expansion and fabrication techniques to maintain weathertightness
- corrosion control
- appropriate fastening, spacing and sealing methods to ensure compliance with relevant current codes, standards and manufacturers' instructions and jurisdictional requirements:
 - National Construction Code (NCC)
 - AS 1562.1 *Design and installation of sheet roof and wall cladding*
 - HB39 *Installation code for metal roof and wall cladding*
- materials and their application for the fabrication and installation of external flashings including suitability for water harvesting
- how to access relevant information, including codes and standards
- tools, materials and equipment used to fabricate and install external flashings

- work health and safety (WHS) requirements for fabricating and installing external flashings.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF3024 Install roof components

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element and Performance Criteria 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPRF3024A Install roof components.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install roof components. It includes flashing penetrations through a roof to maintain weatherproofing.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM2055 Work safely on roofs

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|-------------------------------------|-----|---|
| 1 | Identify installation requirements. | 1.1 | Access, read and determine roof component installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
|---|-------------------------------------|-----|---|

- 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).
 - 2.3 Check roof structure for possible obstructions.
 - 2.4 Identify any battens to be relocated, if required.
 - 2.5 Identify any structural supports to be relocated and report to relevant persons for assessment, if required.
- 3 Install roof components.
 - 3.1 Locate and set out opening for installation of components.
 - 3.2 Relocate battens where required.
 - 3.3 Perform installation, fixing and sealing of roofing components.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPRF3024A Install roof components.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF3024 Install roof components

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element and Performance Criteria 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPRF3024A Install roof components.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- installing and sealing two of the following roof components, one to include a soaker tray and one to include a back-pan over flashing:
 - thermal vent or skylight
 - non-mechanised ventilator unit
 - manual box type louvre unit
 - continuous roof ventilator
- installing batten, trimmer or soaker support
- installing one vent that includes non-combustible mesh to be bushfire compliant.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- terminology relating to installation of roof rainwater drainage and roof components
- approved materials, their characteristics and application relating to the installation of roof components:
 - anti-capillary breaks
 - thermal expansion
 - flashing and capping cover
 - flashing jointing
 - sealants
 - fasteners and fixings
 - trimmer and soaker support

- non-combustible mesh
- tools
- electrolysis and problems associated with the use of dissimilar metals
- processes, procedures and techniques for installing roof components:
 - bushfire compliance including National Association for Steel-Framed Housing (NASH) Standard for construction in bushfire areas or AS 3959 *Construction of buildings in bushfire-prone areas*
 - adequate structural supports
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install roof components
- work health and safety (WHS) requirements for installing roof components.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF3025 Install roof coverings to curved roof structures

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPRF3025A Install roof coverings to curved roof structures. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to set out and install a curved roof on a roof structure. It includes drawing fabrication patterns based on sketches of roof coverings, calculating curve dimensions and sheet lengths, and selecting required roofing materials.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM2055 Work safely on roofs

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1	Identify installation requirements.	1.1	Access, read and determine curved roof covering installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.
		1.2	Obtain, interpret and follow workplace, work health and safety (WHS), environmental and sustainability

requirements associated with selecting and receiving materials and installing curved roof structures.

- 2 Prepare for work.
 - 2.1 Ascertain curvature of roof covering and use to determine the starting and finishing points of curves.
 - 2.2 Create design and freehand sketch of the roof covering to form the basis of fabrication patterns.
 - 2.3 Draw fabrication patterns based on design and freehand sketch of roof covering.
 - 2.4 Calculate the quantity and type of manufactured roof covering.
 - 2.5 Create a materials list and collect materials.
 - 2.6 Select and check proposed sealant, fixing, roofing and flashing materials for compatibility.
 - 2.7 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Install roof coverings.
 - 3.1 Fix safety mesh and thermal insulation according to relevant Australian Standards, job specifications and manufacturers' instructions.
 - 3.2 Mark and trim sheets prior to fixing and treat cut edges according to manufacturers' instructions.
 - 3.3 Perform installation of roof covering according to manufacturers' instructions.
 - 3.4 Performance-test roof covering and make required adjustments.
 - 3.5 Access installation information to complete documentation according to workplace requirements.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and

report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPRF3025A Install roof coverings to curved roof structures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF3025 Install roof coverings to curved roof structures

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPRF3025A Install roof coverings to curved roof structures. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- determining sheet length and developing a pattern or drawing for the manufacture of the curved roof components
- installing pre-curved roof covering to a bullnose or curved roof structure of a minimum eave width of three metres, incorporating:
 - one internal or one external corner
 - curved flashing or valley
- determining sheet length for a sprung-curved roof
- installing pierced-fixed convex sprung-curved roof covering to a curved roof structure, incorporating a minimum width of two sheets.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- capillary action, thermal expansion and fabrication techniques to prevent leaking installations
- processes for fixing covering to curved roof structures
- characteristics and limitations of materials for installing roof coverings to curved roofs:
 - blanket and batt types
 - curved metal roof covers of concealed or pierce-fixed types
 - metal rainwater goods
 - metal self-drilling and tapping screws
 - plastic building sheets for walls and roofs
 - rivets and sealants
 - thermal insulation of reflective foil laminates
- other approved materials

- how to access relevant information, including codes and standards
- tools, materials and equipment used to install roof coverings to curved roof structures
- work health and safety (WHS) requirements for installing roof coverings to curved roof structures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF3026 Install roof sheets, wall cladding and complex flashings

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is not equivalent to CPCPRF3026A Install composite roof systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install roof sheets, wall cladding and complex flashings.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM2055 Work safely on roofs

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|-------------------------------------|-----|---|
| 1 | Identify installation requirements. | 1.1 | Access, read and determine installation requirements for roof sheets, wall cladding and complex flashings from job plans and specifications, codes, relevant Australian Standards, manufacturer's specifications and jurisdictional requirements. |
| | | 1.2 | Identify and apply workplace, work health and safety |

- (WHS) and environmental requirements.
- 1.3 Identify whether the materials used are compatible with the surrounding environment and other material within the installation, in accordance with workplace procedures.
 - 1.4 Identify roof insulation to meet energy efficient and moisture control requirements.
 - 1.5 Identify safety mesh requirements.
- 2 Prepare for work.
- 2.1 Determine material types and calculate quantities from job plans and specifications and in accordance with truss and/or batten spacings.
 - 2.2 Prepare roof and wall coverings, sealant, non-metallic materials, fixing materials, roofing and catchments to comply with job plans and specifications.
 - 2.3 Create a materials list and collect materials.
 - 2.4 Select and check serviceability of appropriate tools, plant and equipment including application of personal protective equipment (PPE).
 - 2.5 Check fall protection system is in place and secure.
- 3 Install roof sheeting.
- 3.1 Fix safety mesh and insulation according to job plans and specifications, relevant codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
 - 3.2 Mark and trim roof sheets prior to fixing in accordance with truss and roof batten spacings.
 - 3.3 Treat cut edges of roof sheets according to manufacturer's specifications.
 - 3.4 Fix roof sheeting, cladding and non-metallic materials in accordance with relevant codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.

- | | | | |
|---|---|-----|---|
| 4 | Install wall cladding and complex roof flashings. | 4.1 | Measure, cut and fasten support battens, where required, in accordance with relevant codes, Australian Standards manufacturer's specifications and jurisdictional requirements. |
| | | 4.2 | Measure and cut weather cladding using appropriate fastening methods, as required, in accordance with relevant codes, Australian Standards and manufacturer's specifications. |
| | | 4.3 | Perform installation of complex flashing using approved joining and fastening techniques. |
| | | 4.4 | Seal and weatherproof installation according to job plans and manufacturer's specifications. |
| 5 | Clean up. | 5.1 | Clear the work area and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace requirements. |
| | | 5.2 | Clean tools and equipment, check for serviceability reporting any damage, store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is non-equivalent to CPCPRF3026A Install composite roof systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF3026 Install roof sheets, wall cladding and complex flashings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is not equivalent to CPCPRF3026A Install composite roof systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing roof sheeting, wall cladding and insulation from given plans and specifications ensuring that jointing and sealing are weatherproofed. Each roof sheeting installation to be a minimum of 4 square metres in area, and include flashings and cappings, using the pierced and concealed fastening methods
- installing one complex roof flashing from given plans and specifications, to a dormer or portico and a transition flashing between two different roof pitches, ensuring that jointing and sealing are weatherproofed to a:
 - complex junction of flashings incorporating two barges and a rolled ridge over a dormer; or
 - dormer valley installation penetrating and terminating through a steep pitched roof; and
 - steep pitch to Flatdek transition flashing including a valley over an internal angle in the flashing.

Note: Jointing and sealing to be weatherproof.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Safe Work Australia - Managing the risk of falls in housing construction, Code of Practice
- sequential installation
- battens and/or safety battens required spacings for:
 - 600 mm truss spacing
 - >900 mm truss spacing
- batten fixing requirements to roof trusses
- roof components:
 - roof sheeting

- wall cladding
- flashing and capping
- complex flashing
- roof battens
- fixings and fasteners
- weathering
- approved sealants
- installation in bushfire prone areas
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install roof sheeting, wall cladding and complex flashings
- work health and safety (WHS) requirements to install roof sheeting, wall cladding and complex flashings.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF3027 Select and install a heritage roof system

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge to select and install a heritage roof system. In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

- CPCPCM2043 Carry out WHS requirements
- CPCPCM2055 Work safely on roofs

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify installation requirements.	1.1 Access, read and determine heritage roof sheeting installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. 1.2 Identify and apply workplace, work health and safety

- (WHS), environmental and sustainability requirements associated with selecting and receiving materials and installing heritage roofing systems.
- 1.3 Check whether the materials used are compatible with the surrounding environment and other materials within the installation.
 - 1.4 Determine heritage material types and calculate quantities from plans and specifications.
- 2 Receive delivery of materials.
 - 2.1 Provide safe access for delivery vehicles and onsite workers.
 - 2.2 Check conformity of materials against the delivery docket and specifications and report any shortfalls or damage.
 - 2.3 Secure materials and protect from moisture and mechanical damage.
 - 3 Prepare for work.
 - 3.1 Identify and check serviceability of plant, equipment and tools required for installation and maintenance activities.
 - 3.2 Select, fit and use appropriate personal protective equipment (PPE).
 - 4 Install heritage roof sheeting.
 - 4.1 Measure, cut and fix relevant substrate or roof battens for heritage roofing installation at correct spacings to match plans and job requirements.
 - 4.2 Measure, cut, weather and install heritage roof sheets using appropriate fastening spacing and methods.
 - 4.3 Remove any swarf at end of installation.
 - 5 Fabricate and install flashings.
 - 5.1 Fabricate the required heritage roof flashings.
 - 5.2 Measure, cut, fasten and seal the flashing onto a heritage roof structure matching plans and job specifications.

- 6 Clean up.
 - 6.1 Remove any swarf off cladding, flashings and gutters.
 - 6.2 Clear any rivet stems and fasteners.
 - 6.3 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 6.4 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF3027 Select and install a heritage roof system

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- installing either copper, lead or galvanised roof cladding to a roof structure not less than 2 metres wide and 1.5 metres long:
 - installing onto appropriate substrate or hardwood timber battens to suit heritage roofing support methods
 - installing a flat or pitched roof system using an approved fixing and sealing method as per heritage requirements
 - selecting and installing 4 short sheet lengths applying laying pattern and end-lap protection
- fabricating and installing the following flashings not less than 600 mm long:
 - one hip or ridge intersection flashing using bossed lead
 - a galvanised steel intersection valley with a soldered saddle
 - a chimney flashing, including soaker tray, back gutter, and hanging and stepped flashing using either lead, zinc or galvanised steel
 - a rolled barge gable intersection with conical end capping
- fabricating and installing at least 600 mm length of galvanised OR lead box gutter including soldered stop ends, round spout, overflow and an external OR internal 45 OR 300 degree angle
- fabricating and installing a round galvanised downpipe offset with soldered joints
- fabricating and installing a bossed OR welded lead collar flashing to suit a 50 mm round penetration
- fabricating and installing a rainwater head from one of the following:
 - zinc, copper or galvanised steel and soldered
 - manufactured in lead, and welded
 - manufactured galvanised

- copper finial.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- plans and specifications
- current standards and codes for roof sheeting and insulation:
 - HB39 *Installation code for metal roof and wall cladding*
 - National Construction Code (NCC)
- receiving roofing materials
- materials and details required to replace heritage roof systems
- heritage cladding profiles, coatings and material-grade roof components:
 - batten types to match existing including Oregon and hardwood
 - lead or galvanised flashing into brickwork or chimneys
 - heritage fixings, fasteners and seals
 - heritage sealing methods
 - vents, finials and decorative features
 - hand bossing
 - lead welding
 - compatibility of materials weathering
 - ventilation
- how to access relevant information, including codes and standards to select and install a heritage roof system
- tools, materials and equipment used to select and install a heritage roof system
- work health and safety (WHS) requirements for installing and maintaining a heritage roof system.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPRF4011 Design and size roof drainage systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPRF4011B Design and size roof drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design, size and document the layout of roof drainage systems for Class 1 and 6 buildings as defined in the National Construction Code (NCC).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify roof drainage system requirements.	1.1 Access, read and determine design and size of roof drainage system from plans, job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements.
2 Design and size	2.1 Design and size system layout in accordance with

- system layout. relevant manufacturers' instructions, Australian Standards and jurisdictional requirements.
- 2.2 Determine roof catchment areas and design flows from rainfall data and current Australian standards.
 - 2.3 Determine quantity and size of gutters, sumps, rain heads, overflows and downpipes.
 - 2.4 Produce final roof drainage system layout plans according to relevant drawing design standards.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPRF4011B Design and size roof drainage systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPRF4011 Design and size roof drainage systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPRF4011B Design and size roof drainage systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- designing, sizing and documenting the layout of a roof drainage system including overflows for two varied roof types:
 - one incorporating eaves gutter for a residential (Class 1) building, and
 - one for a commercial (Class 6) building incorporating a box gutter and sumps or rain heads.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- relevant information sources for designing and sizing roof drainage systems
- processes for calculating catchment areas and design flows
- quantity and size of gutters, sumps, rain heads and downpipes determined according to relevant Australian Standards, plans and specifications
- environmental requirements and sustainability principles including efficient design principles
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers and computer-aided design (CAD) software for documentation
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design, size and document the layout of roof drainage systems
- work health and safety (WHS) requirements for designing, sizing and documenting the layout of roof drainage systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPSN3011 Plan the layout of a residential sanitary plumbing system and fabricate and install sanitary stacks

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Removed duplicative point from Knowledge Evidence: *WHS requirements for fabricating and installing sanitary stacks.*
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Change to Pre-requisite unit. Correction to Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is not equivalent to CPCPSN3023A Fabricate and install sanitary stacks, and CPCPSN3011B Plan layout of a residential sanitary plumbing system. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to plan the layout of a residential sanitary plumbing system for a three-storey residence.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|--|
| 1 Plan and identify installation requirements. | 1.1 Access, read and determine sanitary plumbing system installation requirements from plans, job specifications, codes, relevant Australian Standards, manufacturers' instructions and jurisdictional requirements. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| | 1.3 Plan and record layout of sanitary plumbing system. |
| 2 Prepare for work. | 2.1 Create a materials list and collect materials. |
| | 2.2 Select appropriate tools and equipment including personal protective equipment (PPE). |
| 3 Install and test sanitary stack. | 3.1 Set out sanitary stack. |
| | 3.2 Locate and install fixings and supports. |
| | 3.3 Fabricate, join and install stacks. |
| | 3.4 Test sanitary stack installation. |
| 4 Clean up. | 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPSN3023A Fabricate and install sanitary stacks, and CPCPSN3011B Plan layout of a residential sanitary plumbing system.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPSN3011 Plan the layout of a residential sanitary plumbing system and fabricate and install sanitary stacks

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
- Removed duplicative point from Knowledge Evidence: WHS requirements for fabricating and installing sanitary stacks.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Change to Pre-requisite unit. Correction to Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is not equivalent to CPCPSN3023A Fabricate and install sanitary stacks, and CPCPSN3011B Plan layout of a residential sanitary plumbing system. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- planning the layout for residential sanitary plumbing systems, from given plans and specifications for a three-storey residence, including the following fixtures on each floor:
 - a bath
 - a shower
 - a water closet
 - a basin
 - a floor waste gully
 - a kitchen sink
 - a laundry tub
- fabricating and installing, from a given set of plans and job specifications, three different installations of sanitary plumbing systems across a minimum of two building levels including the following fixtures on each level:
 - a bath
 - a shower
 - a water closet

- a basin
- a floor waste gully
- a kitchen sink
- a laundry tub
- fabricating and installing each planned sanitary system including:
 - using two different materials
 - connecting the discharge piping at each floor
 - preparing stack connection to below ground drain
 - testing the sanitary system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- terminology relating to sanitary plumbing systems
- installation requirements of sanitary plumbing fixtures
- properties of soil and waste discharges, including temperature and corrosive discharges
- approved materials and components, their characteristics and application relating to sanitary plumbing systems
- how to access relevant information, including codes and standards
- materials and equipment used for planning the installation of residential sanitary plumbing systems
- work health and safety (WHS) requirements for planning the installation of residential sanitary plumbing systems
- principles of sanitary plumbing systems:
 - elevated pipework
 - fully vented modified
 - reduced velocity aerated stack systems
 - single stack
 - single stack modified
- tools, materials and equipment used to fabricate and install sanitary stacks.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPSN3022 Install discharge pipes

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPSN3022A Install discharge pipes.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install discharge pipes.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and determine discharge pipe installation requirements from plans, job specifications, codes, relevant Australian Standards, manufacturers' specifications and jurisdictional requirements. |
| | 1.2 Obtain, interpret and follow workplace, work health and safety (WHS) and environmental requirements. |
| 2 Prepare for work. | 2.1 Create a materials list and collect materials. |
| | 2.2 Select appropriate tools and equipment including personal protective equipment (PPE). |

- | | | | |
|---|---|-----|--|
| 3 | Install and test discharge pipe system. | 3.1 | Set out discharge pipes. |
| | | 3.2 | Locate and install fixings and supports. |
| | | 3.3 | Test discharge pipe system. |
| | | | |
| 4 | Clean up. | 4.1 | Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPSN3022A Install discharge pipes.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPSN3022 Install discharge pipes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPSN3022A Install discharge pipes.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- installing discharge pipes, from given plans and specifications, to the following:
 - a bath
 - a shower
 - a water closet
 - a basin
 - a floor waste gully
 - a kitchen sink
 - a laundry tub
- installing discharge pipes from given layouts, including:
 - two approved materials and approved joining methods
 - connecting fixture discharge pipes to an approved point of connection.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- terminology relating to discharge pipes
- properties of soil and waste discharges, including temperature and corrosive discharges
- approved materials and components, their characteristics and application relating to discharge pipes
- how to access relevant information
- tools, materials and equipment used for the installation of discharge pipes
- work health and safety (WHS) requirements for installing discharge pipes.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPSN3025 Install pre-treatment facilities

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPSN3025A Install pre-treatment facilities. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install pre-retreatment facilities designed to intercept and retain prohibited discharges to the sanitary plumbing and drainage system.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--------------------------|---|
| 1 Identify requirements. | 1.1 Access, read and determine pre-treatment facility installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
| | 1.2 Obtain, interpret and follow workplace, work health and safety (WHS) and environmental requirements. |
| 2 Prepare for work. | 2.1 Create a materials list and collect materials. |

- 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Install and test pre-treatment facility.
 - 3.1 Set out work and check to confirm compliance with plans, specifications and authority requirements.
 - 3.2 Install pre-treatment facility according to manufacturers' instructions, relevant Australian Standards and jurisdictional requirements.
 - 3.3 Test and analyse system to ensure installation is functioning correctly and is compliant with manufacturers' instructions, relevant Australian Standards and jurisdictional requirements.
 - 3.4 Complete documentation according to workplace requirements.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of any materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPSN3025A Install pre-treatment facilities.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPSN3025 Install pre-treatment facilities

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPSN3025A Install pre-treatment facilities. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing, commissioning and testing two different pre-treatment facilities for a sanitary plumbing or drainage system.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- processes for materials handling when installing pre-treatment facilities
- process for installing pre-treatment facilities:
 - acid traps and neutralisers
 - cooling interceptors
 - grease traps
 - plaster and clay traps
 - silt interceptors
 - solid traps
 - solvent and oil interceptors
- properties and effects of prohibited waste discharges to sewers
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install pre-treatment facilities
- work health and safety (WHS) requirements for installing pre-treatment facilities.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPSN3026 Install sewerage pumpsets

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPSN3026A Install sewerage pumpsets.
Updated to meet the Standards for Training Packages 2012.

Application

The unit specifies the skills and knowledge required to install sewerage pumps including installing and testing small bore macerators.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|------------------------|-----|---|
| 1 | Identify requirements. | 1.1 | Access, read and determine sewerage pumpset installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
| | | 1.2 | Identify and follow workplace, work health and safety (WHS) and environmental requirements. |

- | | | | |
|---|----------------------------------|-----|--|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select appropriate tools and equipment including personal protective equipment (PPE). |
| 3 | Install sewerage pump equipment. | 3.1 | Set out pump according to plans, specifications, site requirements or job instructions, with consideration given to the location of existing services. |
| | | 3.2 | Install pumping equipment in specified locations using required fixings. |
| | | 3.3 | Connect pipework and pump controls according to plans, manufacturers' instructions and Australian Standards. |
| | | 3.4 | Operate and test installed sewerage pump equipment and related pipework according to relevant Australian Standards and manufacturers' instructions. |
| | | 3.5 | Complete documentation according to workplace requirements. |
| 4 | Clean up. | 4.1 | Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPSN3026A Install sewerage pumpsets

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPSN3026 Install sewerage pumpsets

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPSN3026A Install sewerage pumpsets.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- installing a small-bore macerator including rising main to an approved point of discharge
- using a submersible sewerage pump and correctly installing pump on an approved base
- ensuring correct operation of pump, float valves and alarm functions.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- methods of fixing techniques
- levelling and alignment processes
- performance measures for various sewerage pumpsets:
 - small bore macerators
 - submersible pumps
- properties of sewerage
- tools and equipment used to install sewerage pumpsets including lifting and load-shifting equipment
- how to access relevant information, including codes and standards
- work health and safety (WHS) requirements for installing sewerage pumpsets.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPSN4011 Design and size sanitary plumbing systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPSN4011B Design and size sanitary plumbing systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design, size and document the layout of sanitary plumbing systems for multi-floor residential buildings and commercial buildings.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Identify sanitary plumbing system requirements. | 1.1 Access, read and determine design and size of sanitary plumbing system from plans, job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| | 1.3 Determine quantity, location, fixtures and legal points of discharge. |

- | | |
|----------------------------------|--|
| 2 Design and size system layout. | 2.1 Design and size system layout in accordance with relevant manufacturers' instructions, Australian Standards and jurisdictional requirements. |
| | 2.2 Use the proposed design to identify and specify optimal material requirements. |
| | 2.3 Produce final system layout plans according to relevant drawing design standards. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPSN4011B Design and size sanitary plumbing systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPSN4011 Design and size sanitary plumbing systems

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPSN4011B Design and size sanitary plumbing systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout and schematic details for a commercial building with the design incorporating:
 - an approved sanitary plumbing system to a minimum of seven floor levels. The design must incorporate the following fixtures on each floor level:
 - a disabled bathroom including a water closet (WC) and basin
 - male toilet facilities including 3 WCs, 3 basins and 3 individual urinals or an equivalent sized urinal slab
 - female toilet facilities including 5 WCs and 3 basins
 - a shower
 - kitchen sink for tea-making purposes
 - one floor level must contain a commercial kitchen with food preparation area including at least:
 - one commercial dishwasher
 - one commercial pot wash facility
 - one commercial glasswasher
 - one bucket trap
 - one basin
 - one floor level must be below the approved point of connection (a basement) and involve an approved trade waste facility
- designing, sizing and documenting the layout and schematic details for a residential building incorporating an approved sanitary plumbing system to a minimum of six floor levels, including a basement and the following fixtures on each floor level, excluding the basement:
 - 3 baths
 - 6 showers

- 6 WCs
- 6 basins
- 3 kitchen sinks
- 3 dishwashers
- 3 laundry tubs
- 3 clothes washing machines.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- relevant manufacturers' instructions, Australian Standards and jurisdictional requirements
- properties of soil and waste discharges, including temperature and corrosive discharges
- approved materials and components, their characteristics and application relating to sanitary plumbing systems
- acoustic treatment of sanitary pipework
- principles of sanitary plumbing systems:
 - elevated pipework
 - fully vented modified
 - reduced velocity aerated stack systems
 - single stack
 - other approved systems
- reduced and invert levels
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers and computer-aided design (CAD) software for documentation
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design, size and document the layout of sanitary drainage systems
- work health and safety (WHS) requirements for designing, sizing and documenting the layout of sanitary drainage systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3020 Connect and install storage tanks to a domestic water supply

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release5.0.
- Supersedes and is equivalent to CPCPWT3020A Connect and install storage tanks to a domestic water supply. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to connect and install storage tanks to a domestic water supply.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3023 Fabricate and install non-ferrous pressure piping

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|---|
| 1 Identify installation requirements. | 1.1 Access, read and determine storage tank installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
| | 1.2 Identify and apply workplace, work health and safety |

(WHS) and environmental requirements.

- | | | | |
|---|--------------------------------|-----|--|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select and check serviceability of appropriate tools and equipment including personal protective equipment (PPE). |
| 3 | Install and test storage tank. | 3.1 | Install storage tank and associated pipework according to job instructions or plans, manufacturers' instructions, relevant Australian Standards and jurisdictional requirements. |
| | | 3.2 | Pressure test and commission installed storage tank according to relevant manufacturers' instructions, Australian Standards, job specifications and jurisdictional requirements. |
| 4 | Clean up. | 4.1 | Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT3020A Connect and install storage tanks to a domestic water supply.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3020 Connect and install storage tanks to a domestic water supply

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release5.0.
- Supersedes and is equivalent to CPCPWT3020A Connect and install storage tanks to a domestic water supply. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- connecting and commissioning an approved static water storage tank to a water distribution pipe system
- meeting the specified location and installation requirements including:
 - correct air gap
 - operational water level
 - overflow requirements
 - minimum outlet size
 - tank placement
 - safe tray and safe waste.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- uses and limitations of materials involved in connecting and installing water storage tanks
- process for connecting static water storage tanks
- statutory and regulatory authority requirements:
 - correct air gap
 - operational water level
 - overflow requirements
 - minimum outlet size
 - tank placement
 - safe tray and safe waste
 - testing and commissioning
- how to access relevant information, including codes and standards

- tools, materials and equipment used to connect and install storage tanks to a domestic water supply
- work health and safety (WHS) requirements for connecting and installing storage tanks to a domestic water supply.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3021 Set out and install water services

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPWT3021A Set out and install water services. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install heated, tempered, cold, drinking and non-drinking water services from water supply to fixture or points of discharge.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, and regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3023 Fabricate and install non-ferrous pressure piping

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.

1.1 Access, read and determine water service installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.

1.2 Obtain, interpret and follow workplace, work health and safety (WHS) and environmental requirements.

- | | | | |
|---|-------------------------------|-----|---|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select and check serviceability of appropriate tools and equipment including personal protective equipment (PPE). |
| 3 | Install and test pipe system. | 3.1 | Set out and install pipework and connection points according to drawings, relevant specifications, Australian Standards, codes and jurisdictional requirements. |
| | | 3.2 | Test installed pipework according to relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
| 4 | Clean up. | 4.1 | Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT3021A Set out and install water services.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3021 Set out and install water services

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPWT3021A Set out and install water services. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by setting out, installing and testing:

- water services from a cold drinking water supply line to a shower, basin, bath, laundry trough and kitchen sink, and include a provision for a water heater
- a heated water supply line to a kitchen sink and laundry trough
- a tempered water supply line to a basin, shower and bath
- a non-drinking water supply to a water closet and hose tap.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- processes and requirements of installing water piping systems:
 - proximity to other services
 - location of piping
 - depth of cover, bedding and backfill
 - insulation
 - protection
 - pipe support
 - identification of piping
 - sizing
- properties of water including density, viscosity, compressibility, boiling point and freezing point
- pressure and flow rates
- water supply backflow and cross-connection
- how to access relevant information, including codes and standards
- tools, materials and equipment used to set out and install water services
- work health and safety (WHS) requirements for setting out and installing water services.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3022 Install and commission water heating systems and adjust controls and devices

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor change in Performance Evidence for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is not equivalent to CPCPWT3022A Install and adjust water service controls and devices, and CPCPWT3023A Install and commission water heating systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and commission water heaters and install and adjust controls and mixing devices used to manually control water mix and flow.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and determine water heating system and control device installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional |
|---------------------------------------|--|

- requirements.
- 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check serviceability of appropriate tools and equipment including personal protective equipment (PPE).
- 3 Install water heating system and service control device.
 - 3.1 Position water heating system in accordance with relevant Australian Standards, manufacturers' instructions and jurisdictional requirements.
 - 3.2 Install and connect pipework and valves to water heating system in accordance with relevant Australian Standards, manufacturers' instructions and jurisdictional requirements.
 - 3.3 Determine tempered water control device size from available pressure and number of fixtures supplied in accordance with Australian Standards, manufacturers' instructions and jurisdictional requirements.
 - 3.4 Install tempered water device and connect to pipework in accordance with Australian Standards, manufacturers' instructions and jurisdictional requirements.
 - 3.5 Commission water heating system and control device.
 - 3.6 Test installed pipework according to Australian Standards, manufacturers' instructions and jurisdictional requirements.
 - 3.7 Complete installation and documentation according to relevant regulatory and workplace requirements.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPWT3022A Install and adjust water service controls and devices, and CPCPWT3023A Install and commission water heating systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3022 Install and commission water heating systems and adjust controls and devices

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor change in Performance Evidence for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is not equivalent to CPCPWT3022A Install and adjust water service controls and devices, and CPCPWT3023A Install and commission water heating systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and commissioning three different water heaters, including one manifold system from the following:
 - a vented storage water heater
 - an unvented storage water heater
 - a continuous flow water heater
 - a solar water heater
 - a heat pump
 - a water service consisting of a tempering valve
- adjusting water service controls and devices from the above installations to manufacturers' instructions, Australian Standards and jurisdictional requirements.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- approved materials and components of water heating systems and control devices
- processes, procedures and techniques for:
 - installing water heaters
 - using testing equipment
- properties of water, including pressure and flow rates
- water service controls and mixing devices

- how to access relevant information, including drawings conventions, symbols and abbreviations, codes and standards
- tools, materials and equipment used to install and commission water heating systems and adjust controls and devices
- work health and safety (WHS) requirements for installing and commissioning water heating systems and adjust controls and devices.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3024 Install and maintain domestic water treatment equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPWT3024A Install and maintain domestic water treatment equipment. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and maintain domestic water treatment equipment.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.

1.1 Access, read and determine water treatment installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.

1.2 Obtain, interpret and follow workplace, work health and safety (WHS) and environmental requirements associated with installing and maintaining domestic water treatment equipment.

- | | | |
|---|-----|--|
| 2 Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | 2.2 | Select appropriate tools and equipment including personal protective equipment (PPE). |
| 3 Install, test and commission water treatment equipment. | 3.1 | Set out position of water treatment equipment. |
| | 3.2 | Test water supply adjacent to the equipment for appropriate pressure. |
| | 3.3 | Install water treatment equipment. |
| | 3.4 | Test and commission installation. |
| 4 Maintain water treatment equipment. | 4.1 | Identify service and maintenance requirements. |
| | 4.2 | Conduct maintenance operations following manufacturers' instructions. |
| 5 Clean up. | 5.1 | Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | 5.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT3024A Install and maintain domestic water treatment equipment.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3024 Install and maintain domestic water treatment equipment

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPWT3024A Install and maintain domestic water treatment equipment. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by installing, commissioning and maintaining one of the following:

- a cartridge water filter
- a water cooler
- a water softener
- a water conditioner
- a reverse osmosis filter
- a sand filter.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- characteristics, applications and installation requirements:
 - cartridge filters
 - water softeners
 - water coolers
 - water conditioners
 - reverse osmosis filters
 - sand filters
- osmosis and reverse osmosis, filtration and purification
- properties of hard and soft water
- sources of contamination and impurities
- pressure and flow rates
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install and maintain domestic water treatment equipment

- work health and safety (PPE) requirements for installing and maintaining domestic water treatment equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3025 Install water pumpsets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPWT3025A Install water pumpsets.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install, test and commission water pumpsets.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify installation requirements.	1.1 Access, read and determine water pumpset installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.
	1.2 Obtain, interpret and follow workplace, work health and safety (WHS) and environmental requirements.
2 Prepare for work.	2.1 Create a materials list and collect materials.
	2.2 Select and check serviceability of appropriate tools and

- equipment including personal protective equipment (PPE).
- 2.3 Prepare work area to support the efficient installation of water pumpset.
- 3 Install water pumpset.
- 3.1 Set out and install pumpset to comply with relevant Australian Standards, job specifications, manufacturers' instructions and jurisdictional requirements.
- 3.2 Test and commission installation.
- 4 Clean up.
- 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
- 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT3025A Install water pumpsets.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3025 Install water pumpsets

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPWT3025A Install water pumpsets.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- planning layout, installing, testing and commissioning a centrifugal pump.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- atmospheric pressure
- fixing techniques and pump connections
- process for installing and application of water pumpsets:
 - circulating
 - pressure
 - submersible
- properties of water, including pressure, flow rate and velocity
- basic pump sizing
- characteristics and use of pump controls:
 - automatic controls which may float, level or flow switches
 - manual
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install water pumpsets
- work health and safety (PPE) requirements for installing water pumpsets.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3026 Install and fit off sanitary fixtures, water services and adjust water service controls

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is not equivalent to CPCPSN3024A Install and fit off sanitary fixtures, and CPCPWT3026A Fit off and commission heated and cold water services. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to fit off and commission heated, tempered and cold-water services to sanitary fixtures. It includes installing and fitting sanitary fixtures and adjusting water service controls and devices.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|---------------------------------------|-----|---|
| 1 Identify installation requirements. | 1.1 | Access, read and determine fixture and service installation requirements from plans, job specifications, codes, relevant Australian Standards, manufacturers' instructions and jurisdictional requirements. |
| | 1.2 | Identify and apply workplace, work health and safety (WHS) and environmental requirements. |

- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).

- 3 Install and connect fixtures.
 - 3.1 Set out, position, assemble and install sanitary fixtures in accordance with plans, job specifications, codes, relevant Australian Standards, manufacturers' instructions and jurisdictional requirements.
 - 3.2 Position and install flushing device.
 - 3.3 Flush service lines and connect to fixtures and devices.
 - 3.4 Test water service, fixtures and devices for correct function.
 - 3.5 Adjust controls and devices to operate with even and consistent flow.
 - 3.6 Test installed pipework in accordance with codes, relevant Australian Standards and manufacturers' instructions.
 - 3.7 Maintain tapset and mixer tap in accordance with relevant Australian Standards, codes and manufacturers' instructions.
 - 3.8 Complete documentation according to relevant regulatory requirements.

- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCPSN3024A Install and fit off sanitary fixtures, and CPCPWT3026A Fit off and commission heated and cold water services.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3026 Install and fit off sanitary fixtures, water services and adjust water service controls

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is not equivalent to CPCPSN3024A Install and fit off sanitary fixtures, and CPCPWT3026A Fit off and commission heated and cold water services. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- setting out, installing and fitting off sanitary fixtures and tapware from an approved point of connection to a:
 - water closet (WC)
 - shower
 - sink
 - bath
 - basin
 - dishwashing machine
 - wall hung urinal
 - non-drinking water hose tap
- installing and adjusting a programmed flushing device for a cold-water service
- adjusting and commissioning two different WC cisterns
- reseating a brass tap and installing an approved jumper valve
- removing and replacing a mixer tap cartridge with a replacement cartridge.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- properties of water, including pressure and flow rates
- approved materials, components, their characteristics and their application for installing sanitary fixtures, cold water systems and water service controls and devices
- water service controls and mixing devices
- working drawing conventions, symbols and abbreviations
- how to access relevant information, including codes and standards

- tools, materials and equipment used to fit off and commission heated, tempered and cold-water services to sanitary fixtures
- work health and safety (WHS) requirements for fitting off and commissioning heated, tempered and cold-water services to sanitary fixtures.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3027 Install backflow prevention devices

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Correction to prerequisite unit code from *CPCPCM2043A Carry out WHS requirements* to *CPCPCM2043 Carry out WHS requirements*.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error in Elements and Performance Criteria 1 corrected.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPWT3027A Connect irrigation systems from drinking water supply. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install backflow prevention devices. It does not include the commissioning or testing of backflow prevention devices or arrangements.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3023 Fabricate and install non-ferrous pressure piping.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Identify installation requirements.	<p>1.1 Access, read and determine backflow prevention device installation requirements from relevant job plans and specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.</p> <p>1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements.</p>
2 Prepare for work.	<p>2.1 Create a materials list and collect materials.</p> <p>2.2 Select and check serviceability of appropriate tools and equipment including personal protective equipment (PPE).</p>
3 Connect and test system.	<p>3.1 Set out and install backflow prevention device according to relevant from relevant job plans, specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.</p> <p>3.2 Test installed pipework according to relevant job specifications, codes, Australian standards, manufacturer's specifications and jurisdictional requirements.</p>
4 Clean up.	<p>4.1 Clear the work area and dispose of any materials in accordance with state and territory legislation and workplace procedures.</p> <p>4.2 Clean, check for serviceability and store and secure plant, equipment and tools reporting any damage to appropriate personnel.</p>

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT3027A Connect irrigation systems from drinking water supply.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3027 Install backflow prevention devices

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.
Correction to prerequisite unit code from CPCPCM2043A Carry out WHS requirements to CPCPCM2043 Carry out WHS requirements.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error in Elements and Performance Criteria 1 corrected.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPWT3027A Connect irrigation systems from drinking water supply. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing three different backflow prevention devices one being low hazard rating, one being a medium hazard rating, and one being a high hazard rating from the list below, including pipework to inlet of the backflow device and ancillary equipment.
- Low hazard device defined as:
 - dual-check valve with atmospheric port
 - dual-check valve
 - dual-check valve with intermediate vent
 - atmospheric vacuum breaker
 - single check valve (testable)
 - single check detector assembly (testable).
- Medium hazard testable device defined as:
 - double-check valve assembly
 - double-check detector assembly
 - pressure type vacuum breaker.
- High hazard testable device defined as:
 - registered break tank

- registered air gap
- reduced pressure zone device
- reduced pressure detector assembly.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- pressure and flow rates
- types of backflow prevention devices such as:
 - testable
 - non-testable
- backflow hazard ratings
- suitability of backflow prevention devices
- types of irrigation systems
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install backflow prevention devices
- work health and safety (WHS) requirements to install backflow prevention devices.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3028 Install property service

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPWT3028A Install water service.
Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to install a property service from the authority water main up to and including the water meter assembly.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|---|
| 1 Identify installation requirements. | 1.1 Access, read and determine property service installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| | 1.3 Determine location of property service and the main. |
| | 1.4 Identify cables, conduits, pipes or other services. |

- | | | | |
|---|--|-----|--|
| 2 | Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | | 2.2 | Select appropriate tools and equipment including personal protective equipment (PPE). |
| 3 | Install, test and commission property service. | 3.1 | Mark out and excavate for installation of property service. |
| | | 3.2 | Excavate point of connection to main. |
| | | 3.3 | Drill and tap main in accordance with relevant Australian Standards, codes and jurisdictional requirements. |
| | | 3.4 | Install property service. |
| | | 3.5 | Test and commission installation. |
| 4 | Clean up. | 4.1 | Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT3028A Install water service.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3028 Install property service

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPWT3028A Install water service.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by installing a property service, involving:

- determining installation requirements
- tapping into a minimum DN100 mm water main
- connecting a property service to a water meter assembly
- testing and commissioning the installation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- water meter installation
- drilling and tapping water main
- approved property service materials
- property service installation requirements
- types of water main materials
- corrosion control
- how to access relevant information legislation, including codes and standards
- tools, materials and equipment used to install a property service
- work health and safety (WHS) requirements for installing a property service.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3029 Install water pipe systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPWT3029A Install water pipe systems.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install and test water pipes larger than DN65.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3023 Fabricate and install non-ferrous pressure piping

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|--|
| 1 Identify installation requirements. | 1.1 Access, read and determine large water service installation requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
|---------------------------------------|--|

- 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select and check serviceability of appropriate tools and equipment including personal protective equipment (PPE).
- 3 Install large water service.
 - 3.1 Set out and install large water service.
 - 3.2 Test installation pipework according to standards and manufacturers' instructions.
 - 3.3 Complete documentation according to relevant regulatory requirements.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT3029A Install water pipe systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3029 Install water pipe systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Changes to Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPWT3029A Install water pipe systems.
Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing and testing a large water service using a length of mains pressure pipe no less than four metres at a minimum of DN65, including:
 - two materials
 - a change of direction or a tee junction
 - one isolation valve.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- types of water mains
- methods of connection to water main or large water service
- installation of large water services
- corrosion control
- how to access relevant information, including codes and standards
- tools, materials and equipment used to install and test water pipe system
- work health and safety (WHS) requirements for installing and testing water pipe systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT3030 Install home fire sprinkler systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPWT3030A Install home fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to install a home fire sprinkler system in a Class 1a building as defined in the National Construction Code (NCC).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPCM3023 Fabricate and install non-ferrous pressure piping

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------------|---|
| 1 Identify installation requirements. | 1.1 Access, read and determine requirements for installing home fire sprinkler systems in a Class 1a building from job specifications, relevant Australian Standards, codes, manufacturers' specifications and jurisdictional |
|---------------------------------------|---|

- requirements.
- 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Install, test and commission system.
 - 3.1 Set out and install a home sprinkler system in a single-story Class 1a building, according to job specifications and in compliance with relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.
 - 3.2 Test and commission home sprinkler system in a single-story Class 1a building, according to job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT3030A Install home fire sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT3030 Install home fire sprinkler systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Typographical error corrected in Element 1.1.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPWT3030A Install home fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- installing a home fire sprinkler system in a single-storey Class 1a building using a length of piping a minimum of four metres and including:
 - a water service using a minimum of two materials
 - a control valve
 - an actuating device
 - an alarm
 - two sprinkler heads
 - one sprinkler head using cross-linked polyethylene (PEX) pipe.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- installation, testing and commissioning requirements of home fire sprinkler systems
- operation and function of purging drain valves
- processes, procedures and techniques of:
 - installing a home fire sprinkler system in a Class 1a building
 - testing and commissioning
 - actuating device
 - control valve assembly
 - alarm systems
 - approved piping and fittings
 - sprinkler heads

- pressure and flow requirements
- building classification
- push-fit and crimp-fit PEX pipe and fitting systems
- domestic sprinkler systems as required by the Deemed-to Satisfy NCC provisions
- how to access relevant information, including codes and standards manufacturers' instructions, codes, relevant Australian Standards and jurisdictional requirements
- tools, materials and equipment used to install home fire sprinkler systems, including testing and commissioning
- work health and safety (WHS) requirements for installing, testing and commissioning home fire sprinkler systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT4011 Design and size heated and cold-water services and systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPWT4011B Design and size heated and cold-water services and systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design, size and document the layout of heated, tempered and cold-water services, flushing systems, and hydrant and hose reel systems for residential and commercial multi-floor buildings.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---------------------------------|--|
| 1 Identify system requirements. | 1.1 Access, read and determine system requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements. |
| | 1.2 Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| | 1.3 Determine quantity, location and points of fixture |

connection.

- | | |
|----------------------------------|--|
| 2 Design and size system layout. | 2.1 Design and size system layout in accordance with relevant manufacturers' instructions, Australian Standards and jurisdictional requirements. |
| | 2.2 Use the proposed design to identify and specify optimal material requirements. |
| | 2.3 Produce final system layout plans according to relevant drawing design standards. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT4011B Design and size heated and cold-water services and systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT4011 Design and size heated and cold-water services and systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPWT4011B Design and size heated and cold-water services and systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout and schematic details for a commercial building with the design incorporating:
 - an approved heated/tempered circulating system and cold-water system to a minimum of seven floor levels. Each floor level must include a hydrant and hose reel system
 - at least five levels with the following fixtures on each floor level:
 - a disabled bathroom incorporating a water closet (WC) and basin
 - male toilet facilities including three WCs, three basins and three individual urinals or an equivalent sized urinal slab incorporating a mains pressure flush valve system
 - female toilet facilities including five WCs and three basins
 - a shower
 - a kitchen sink for tea making purposes
 - one floor level containing a commercial kitchen with food preparation area including at least:
 - a commercial dishwasher
 - a commercial pot wash facility
 - a commercial glasswasher
 - a basin
 - one floor level containing a plant room
- designing, sizing and documenting the layout and schematic details for a residential building with the design incorporating:
 - an approved heated/tempered water system and a drinking and non-drinking cold water system to a minimum of seven floor levels, inclusive of basement, to include fixtures on each floor level (excluding the basement).
 - at least the following fixtures on each floor level:
 - three baths

- six showers
- six WCs
- six basins
- three kitchen sinks
- three dishwashers
- three laundry tubs
- three clothes washing machines.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- process of designing, sizing and documenting the layout of heated, tempered and cold-water services and systems
- properties of water, including pressure and flow rates
- heated, tempered and cold-water services and flushing systems, and fire hydrant and hose reel systems, including non-drinking water requirements
- mains pressure flushing devices
- selection requirements for installing:
 - thermostatic mixing valves
 - backflow prevention devices
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers for documentation
- computer-aided design software
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design and size heated and cold-water services and systems
- work health and safety (WHS) requirements for designing and sizing heated and cold-water services and systems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT4022 Commission and maintain backflow prevention devices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPWT4022A Commission and maintain backflow prevention devices. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to test, commission and maintain backflow prevention devices in water services.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPWT3027 Install backflow prevention devices

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify testing, commissioning and maintenance requirements.

1.1 Access, read and determine backflow prevention device testing, commissioning and maintenance requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.

- 1.2 Obtain, interpret and follow workplace, work health and safety (WHS) and environmental requirements.
- 2 Prepare for work.
 - 2.1 Create a materials list and collect materials.
 - 2.2 Select appropriate tools and equipment including personal protective equipment (PPE).
- 3 Commission and maintain devices.
 - 3.1 Commission and maintain devices in compliance with manufacturers' instructions, relevant Australian Standards and jurisdictional requirements.
 - 3.2 Complete documentation according to regulatory requirements.
- 4 Clean up.
 - 4.1 Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPWT4022A Commission and maintain backflow prevention devices.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT4022 Commission and maintain backflow prevention devices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPWT4022A Commission and maintain backflow prevention devices. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- testing and commissioning the following backflow prevention devices:
 - three different double check valves
 - one single (testable) check valve
 - two different registered air gaps (including different orifice sizes and inlet pressures)
 - three different reduced pressure zone devices
- removing and maintaining:
 - one double check valve
 - one reduced pressure zone device.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- basic hydraulics and mechanics relevant to backflow prevention devices in water services
- process of testing, commissioning and maintaining backflow prevention devices
- properties of water, including pressure and flow rates
- types of backflow prevention devices
- electrical safety
- how to access relevant information, including codes and standards
- tools, materials and equipment used to test, commission and maintain backflow prevention devices in water services
- work health and safety (WHS) requirements for testing, commissioning and maintaining backflow prevention devices in water services.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCPWT4023 Commission and maintain hot and heated water temperature control devices

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCWPT4023A Commission and maintain hot and heated water temperature control devices. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to test, commission and maintain hot and/or heated water temperature control devices, including thermostatic mixing valves in water services.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCPCM2043 Carry out WHS requirements

CPCPWT3022 Install and commission water heating systems and adjust controls and devices

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify commissioning and maintenance requirements.

1.1 Access, read and determine device commissioning and maintenance requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.

- | | | |
|-----------------------------------|-----|---|
| | 1.2 | Identify and apply workplace, work health and safety (WHS) and environmental requirements. |
| 2 Prepare for work. | 2.1 | Create a materials list and collect materials. |
| | 2.2 | Select appropriate tools and equipment including personal protective equipment (PPE). |
| 3 Commission and maintain device. | 3.1 | Commission and maintain device in compliance with manufacturers' instructions, relevant Australian Standards and jurisdictional requirements. |
| | 3.2 | Complete documentation according to regulatory requirements. |
| 4 Clean up. | 4.1 | Clear the work area and dispose of, reuse or recycle materials in accordance with state or territory legislation and workplace requirements. |
| | 4.2 | Clean tools and equipment, check for serviceability and report any damage, and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCWPT4023A Commission and maintain hot and heated water temperature control devices.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPWT4023 Commission and maintain hot and heated water temperature control devices

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCWPT4023A Commission and maintain hot and heated water temperature control devices. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- testing and commissioning three different types of thermostatic mixing valves in accordance with manufacturers' instructions and relevant Australian Standards
- maintaining three different types of thermostatic mixing valves in accordance with manufacturers' instructions and relevant Australian Standards.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- bacteria in water and its effect on health
- characteristics and applications of different types of hot and/or heated water temperature control valves and devices
- process of commissioning hot and/or heated water temperature control devices
- properties of water, including pressure and flow rates
- how to access relevant information, including codes and standards
- tools, materials and equipment used to test, commission and maintain hot and/or heated water temperature control devices, including thermostatic mixing valves in water services
- work health and safety (WHS) requirements for testing, commissioning and maintaining hot and/or heated water temperature control devices, including thermostatic mixing valves in water services.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5001 Define scope and hazard level of fire systems design projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSFS5001A Define scope and hazard level of fire systems design projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to interpret briefs and specifications for fire systems design projects to define the scope and hazard level of projects.

This unit of competency supports the role of fire system designers and design consultants who need to determine the nature and purpose of a fire systems design concept.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes, including the National Construction Code (NCC).

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Interpret fire systems design concept, brief or specification.

1.1 Gather and interpret design concepts and brief, specifications and recommendations for fire systems design project.

- | | | |
|---|-----|---|
| | 1.2 | Determine and outline the nature, purpose and location of proposed fire systems. |
| 2 Establish building classifications and hazard levels for fire systems design project. | 2.1 | Determine size and type of buildings from initial project documentation. |
| | 2.2 | Determine function and occupancy of buildings from initial project documentation. |
| | 2.3 | Obtain clarification of specific building details from client or other relevant persons within project timelines. |
| | 2.4 | Research and confirm building classifications and hazard levels according to relevant codes and standards. |
| 3 Determine and verify the applicable legislation, codes and standards. | 3.1 | Determine and verify regulatory requirements applicable to the fire systems design project. |
| | 3.2 | Determine and confirm the codes and standards applicable to the location and classification of buildings included in fire systems design project. |
| | 3.3 | Determine and verify insurance requirements impacting on applicable codes and standards for fire systems project. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5001A Define scope and hazard level of fire systems design projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5001 Define scope and hazard level of fire systems design projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSF5001A Define scope and hazard level of fire systems design projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- interpreting design concepts, briefs and specifications
- establishing hazard levels and building classifications
- identifying relevant localised legislation, codes and standards for each of the following project types:
 - low-rise building
 - medium-rise building
 - high-rise building (over 25 metres)
 - building over 50 metres in height
 - building classifications in the National Construction Code (NCC)
- selecting and applying one of the following locations to the each of the above project types ensuring all locations have been used at least once:
 - local
 - involving more than one state or territory
 - international.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- fire engineering principles:
 - innovative fire systems
 - relevant computer-aided design (CAD) programs such as:
 - archi CAD
 - Revit
- relevant current legislation, codes and standards:
 - building acts

- building regulations
- infrastructure supply regulations
- the Building Code of Australia (BCA)
- NCC
- jurisdictional authorities in addition to the BCA and NCC
- Australian standards for fire systems
- international standards for fire systems
- other fire systems standards commonly required by building insurers
- fire systems technology and components:
 - water-based systems
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - high-pressure water mist systems
 - gas suppression
- detection and warning systems:
 - emergency warning and intercommunications systems (EWIS)
 - fire detection and alarm systems
 - smoke control systems
- purpose and operation of fire systems:
 - layout
 - system operation
 - performance requirements
 - maintenance standards
 - system activation and operation
- passive fire safety elements:
 - identification of passive elements
 - impact of fire systems design on passive elements
 - specifications required to safeguard integrity of passive fire element performance where penetrations are necessitated by the fire systems design
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services

- construction industry terminology
- different types of buildings for fire systems design projects:
 - residential
 - commercial
 - industrial
 - mixed classification
- building classifications:
 - classifications in the BCA such as:
 - occupancy classes
 - multiple classifications
 - parts with more than one classification
 - classifications specified in relevant Australian or international standards
 - classifications relating to standards or codes applied by building insurers
- how to access relevant information, including codes and standards
- relevant work health and safety (WHS) requirements to define scope and hazard level of fire systems design projects.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5002 Research and interpret detailed fire systems design project requirements

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSFS5002A Research and interpret detailed fire systems design project requirements. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to obtain and process design drawings and documentation required for the preparation of detailed fire systems designs and to make an initial assessment of how the fire systems are affected by other aspects of the project. The unit also covers researching detailed fire systems compliance requirements and regulatory processes and negotiating solutions to conflicts arising between the design brief and compliance or installation requirements.

This unit of competency supports the role of fire systems designers who need to gather and process fire systems design project drawings and documentation and establish the detailed design and compliance requirements for fire systems. The role also involves assessing the impact of building construction and services installation on the detailed fire systems design and negotiating solutions to any conflicts arising.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Gather and interpret project initiation documentation.
 - 1.1 Gather and check fire systems design briefs, plans and specifications for currency and completeness.
 - 1.2 Interpret the specific requirements of engineered or innovative solutions, designed and specified by fire engineers.
 - 1.3 Request, obtain and file relevant drawings, plans and schedules for the building project according to workplace and project procedures.
 - 1.4 Assess impacts of building construction and the installation of other services on fire systems design to pre-empt possible issues.

- 2 Research the detailed requirements of relevant legislation and regulatory processes.
 - 2.1 Investigate legislation impacting on design compliance in different project locations and interpret and note variations in requirements.
 - 2.2 Interpret regulatory requirements impacting on fire systems designs and project processes and specific requirements in different states, territories and jurisdictional locations.
 - 2.3 Identify different climatic or locational conditions and their impact on the operational performance of the designed fire systems.

- 3 Research the detailed requirements of applicable codes and standards.
 - 3.1 Gather and check applicable codes and standards for currency.
 - 3.2 Research and interpret requirements relating to specific fire systems in different types of buildings and situations.
 - 3.3 Determine and apply the appropriate code requirements for the building and situation.

- 4 Consult and negotiate to clarify and finalise project details.
 - 4.1 Confirm the interpretation of the required fire systems design and intended layout and interconnection with relevant personnel.
 - 4.2 Undertake consultation and negotiations with relevant personnel to resolve conflicts between the design brief, regulatory or insurance requirements, the requirements of

building construction, and the installation of the fire systems and other services.

- 4.3 Clarify aesthetic requirements relating to the location of fire system components and installation methods and negotiate solutions.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5002A Research and interpret detailed fire systems design project requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5002 Research and interpret detailed fire systems design project requirements

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSF5002A Research and interpret detailed fire systems design project requirements. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- establishing the detailed design requirements of fire systems design projects, including discretionary client requirements for four different types of buildings, including:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes
- drawings, plans and schedules for the building project:
 - architectural
 - structural
 - mechanical
 - hydraulic
 - electrical
 - layout
 - section
 - detail
 - project schedule or construction program
 - design brief
 - design specifications
- level of accuracy required in detailed design drawings

- compliance requirements for fire systems design projects in different locations
- aesthetic requirements relating to the location of fire system components
- relevant current legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the Building Code of Australia (BCA)
 - the Plumbing Code of Australia
 - Australian standards for fire systems
 - National Construction Code (NCC)
 - jurisdictional authorities in addition to the BCA and NCC
 - international standards for fire systems
- regulatory requirements, systems and processes:
 - mandatory requirements
 - design approval
 - fire brigade requirements
 - certification of installation
 - infrastructure supply regulations
- protection requirements for different buildings
- fire systems' technology and components:
 - water-based systems:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - high pressure water mist systems
 - gas suppression systems
 - detection and warning systems:
 - occupant warning systems
 - emergency warning and intercommunications systems (EWIS)
 - fire detection and alarm systems
 - smoke control systems
- purpose and operation of fire systems:
 - layout
 - system operation
 - performance requirements

- maintenance standards
- system activation and operation
- passive fire safety elements:
 - identification of passive elements
 - impact of fire systems design on passive elements
 - specifications required to safeguard integrity of passive fire element performance where penetrations are necessitated by the fire systems design
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - builders
 - consultants
 - trades
 - commissioning personnel
- on-site issues that can arise during the construction phase and impose changes to the designs of fire systems and other services
- installation methods:
 - access requirements
 - work health and safety (WHS) requirements
- fluid mechanics and hydraulics relating to
 - water supply
 - pressure
 - pump selection
 - tank selection
 - pressure vessels
 - pipe range
- sustainability requirements and ratings:
 - energy conservation
 - water conservation
- types of fire systems for projects and classifications, including:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)

- buildings over 50 metres in height
- types of buildings and situations:
 - different types of buildings:
 - residential
 - commercial
 - industrial
 - warehouse
 - mixed classification
 - buildings in different locations:
 - local
 - involving more than one state or territory
 - classifications of buildings in the BCA:
 - occupancy classes
 - multiple classifications
 - parts with more than one classification
 - fire hazard properties of materials and smoke growth rate
 - classifications of buildings specified in relevant Australian or international standards
 - classifications of buildings relating to standards or codes applied by building insurers.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5003 Develop plans and methodology for fire systems design projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSFS5003A Develop plans and methodology for fire systems design projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to ensure a quality result for the detailed design of fire systems through work organisation, planning and methodology.

This unit of competency supports the role of fire systems designers who manage their own work and take responsibility for ensuring that detailed designs of fire systems are produced within required timeframes and to the standards required for approval of such designs.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Identify and apply procedures for initiating fire systems design projects.

1.1 Identify various project file-sharing and communication systems, tools and methods to ensure efficient and effective operation.

1.2 Use project and file-naming systems according to workplace and project requirements.

- 1.3 Identify efficient and effective document filing and storage systems according to workplace and project requirements.
 - 1.4 Identify systems for efficient tracking and filing of project communications according to workplace and project requirements.
 - 1.5 Identify a system for ensuring relevant project documentation is requested, received, named and filed according to workplace procedures.
- 2 Develop a plan for setting up fire systems design projects.
 - 2.1 Develop plan for setting up correct computer-aided design (CAD) backgrounds according to workplace and project requirements.
 - 2.2 Develop systematic processes for identifying and importing the correct layer drawings into CAD according to workplace and project requirements.
- 3 Develop a plan and methodology for designing fire systems.
 - 3.1 Develop actions and timeframes in the design process for fire systems according to workplace, project requirements, quality assurance and other regulatory approval, as required.
 - 3.2 Determine stages where regulatory or other approval is required for the design and establish procedures to ensure that these are obtained.
 - 3.3 Identify applicable fire codes, standards and data sheets from relevant authorities and underwriters.
- 4 Develop a plan and methodology for finalising fire systems design projects.
 - 4.1 Establish actions and timeframes in the fabrication and installation support process according to workplace and project requirements.
 - 4.2 Establish final drawing and documentation requirements according to workplace and project requirements.
 - 4.3 Establish timelines for long lead items such as fire tanks, fire pumps and specialist overseas equipment.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5003A Develop plans and methodology for fire systems design projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5003 Develop plans and methodology for fire systems design projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSF5003A Develop plans and methodology for fire systems design projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- developing a project plan and methodology for a minimum of four types of fire systems design projects, including:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes
- project documentation:
 - drawings
 - architectural
 - structural
 - mechanical
 - hydraulic
 - electrical
 - layout
 - section
 - detail
 - final drawings:
 - 'as installed' drawings
 - block plans

- tactical fire plans
- commissioning benchmarks
- operations and maintenance manuals
- project schedule or construction program
- design brief
- design specifications
- compliance and quality requirements for fire systems design projects, including:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- communication and negotiation processes
- level of accuracy required in detailed design drawings, plans and reports
- fire systems design activities, including installation support and finalisation
- naming conventions for design drawings and drawing register
- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
- fire systems technology and components:
 - water-based systems:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - water spray systems
 - water mist systems
 - wet chemical suppression systems
 - foam suppression systems
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - detection and warning systems:
 - occupant warning systems
 - emergency warning and intercommunications systems (EWIS)

- fire detection and alarm systems
- smoke control systems
- emergency lighting systems
- purpose and operation of fire systems:
 - special products and hazards
 - system operation
 - performance requirements
 - maintenance standards
 - system activation and operation
- passive fire safety elements
- identification of passive element:
 - impact of fire systems design on passive elements
- construction industry terminology
- roles and responsibilities of relevant building project team and personnel, including:
 - architect
 - lead contractor
 - mechanical engineer or contractor
 - hydraulic engineer or contractor
 - electrical engineer or contractor
 - client
 - consulting engineer
 - civil engineers
 - fire engineers
 - building (private) certifier or surveyor
- project management processes, including scheduling, communications and file sharing
- on-site issues that can arise during the construction phase and impose changes to the designs of fire systems and other services
- regulatory or other approval:
 - building certifier or surveyor
 - fire brigade
 - fire engineer.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5005 Research and evaluate fire system technologies and components

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSFS5005A Research and evaluate fire system technologies and components. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to research, evaluate and select existing, new and incoming technologies and components for fire system detection and suppression systems. The unit also involves developing a broad understanding of the range of products available and their application, operation, performance and interaction.

This unit of competency supports the work of fire systems' designers and certifiers who need to:

- understand the characteristics, operation and interaction of fire system technologies and components
- select and assess fire system technologies and components.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|--|-----|--|
| 1 | Research and evaluate fire suppression | 1.1 | Research and identify the range of technologies and components for fire suppression systems. |
|---|--|-----|--|

- systems.
- 1.2 Assess the suitability of fire suppression systems to different types of buildings and situations with reference to relevant legislation, codes and standards and client requirements.
 - 1.3 Determine the performance characteristics and limitations of fire suppression systems.
 - 1.4 Analyse fire suppression system failures and propose appropriate design solutions.
 - 1.5 Select suitable and cost-effective fire suppression system technologies and components for buildings, situations and climatic conditions.
- 2 Research and evaluate fire detection and occupant warning systems.
- 2.1 Identify technologies and components available for fire detection and occupant warning systems.
 - 2.2 Assess the suitability of fire detection and occupant warning systems to different types of buildings and situations with reference to relevant legislation, codes and standards.
 - 2.3 Determine the performance characteristics and limitations of fire detection and occupant warning systems.
 - 2.4 Select suitable and cost-effective fire detection and occupant warning system technologies and components for buildings and situations.
- 3 Analyse and specify the interaction of fire systems.
- 3.1 Analyse and specify the required interactions for effective operation of fire systems in different types of buildings and situations.
 - 3.2 Identify and examine the interfaces that affect interactions between fire systems in different types of buildings and situations.
 - 3.3 Select suitable fire detection and suppression systems for buildings and situations and specify the interactions and interfaces required for effective performance.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5005A Research and evaluate fire system technologies and components.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5005 Research and evaluate fire system technologies and components

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSF5005A Research and evaluate fire system technologies and components. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- researching, evaluating and selecting fire detection and suppression systems for four types of fire systems design applications, including:
 - sprinklers
 - water mist
 - deluge/pre-action
 - gas suppression.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- drawings, plans, reports and specifications
- manufacturer specifications and technical performance data for fire detection and suppression technologies and components
- applications for different fire systems design projects:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- interactions and interfaces between fire detection and suppression systems
- suitability of fire detection and suppression systems technology and components
- performance and cost-effectiveness of different technologies and components
- workplace design tools and processes

- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
- relevant current legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the Building Code of Australia (BCA)
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - jurisdictional authorities in addition to the BCA and NCC
 - other fire system standards commonly required by building insurers
- fire systems technology and components:
 - water-based systems:
 - wet pipe sprinkler systems and components
 - deluge and drencher systems
 - dry pipe sprinkler systems and components
 - pre-action sprinkler systems and components
 - early suppression fast response (ESFR) sprinklers and components
 - water spray systems
 - water mist systems
 - wet chemical suppression systems
 - foam suppression systems
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - fire control panels
 - valves
 - gaseous suppression systems
 - detection and warning systems:
 - occupant warning systems
 - emergency warning and intercommunications systems (EWIS)
 - fire detection and alarm systems
 - smoke control systems
 - emergency lighting systems
 - fire control panels
- purpose and operation of fire systems:

- layout
- high hazard products
- system operation
- performance requirements
- maintenance standards
- system activation and operation
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility:
 - system activation and operation
 - effect of fire, heat and smoke of component materials
 - interaction with other systems and services
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services
- water supplies:
 - common water sources
 - conservation requirements
 - in-ground reticulation
 - booster configurations
- fluid mechanics and hydraulics relating to:
 - water supply
 - pressure
 - pump selection
 - tank selection
 - pressure vessels
 - pipe range
- sustainability requirements and ratings:
 - energy conservation
 - water conservation
- electrical and electronics theory:
 - units used to measure current (alternating current (AC) and direct current (DC)), power, capacitance, inductance and sound attenuation
 - definition of voltage ratings and requirements applicable to fire detection and warning systems as defined in communication and electrical safety regulations, including extra-low voltage (ELV), low voltage (LV) and hazardous voltages
 - basic operation of common electronic and electrical components used in fire detection and warning systems including:
 - basic operation of communication protocols on addressable systems
 - peripheral devices (printers)
 - interfaces to other communication systems to high level or low level
- communication technologies:

- data transfer
- networking
- communication protocols
- radio frequency technologies.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5006 Create detailed designs for fire sprinkler systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSFS5006A Create detailed designs for fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to obtain, process and set up drawings for the detailed design of fire sprinkler systems. The unit also involves assessing and selecting component requirements, setting out the locations of components, and creating final notated drawings.

This unit of competency supports the role of fire systems designers with responsibility for creating detailed designs for sprinkler fire suppression systems.

Licensing, legislative, regulatory or certification requirements may apply to this unit and so the varying state or territory requirements should be confirmed with the relevant body.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|--|
| 1 Set up fire systems design drawings. | 1.1 Request, receive, name and file relevant project drawings and documentation according to workplace procedures. |
| | 1.2 Clean drawings to leave minimal essential information. |
| | 1.3 Import layers showing designs of other services into clean architectural or structural drawings. |

- 1.4 Add details from drawings of the floor of the level above, if these affect the design.
 - 1.5 Name, file and back up the detailed design drawings according to workplace procedures.
 - 2 Calculate preliminary data.
 - 2.1 Develop floor area calculations to determine the number of sprinkler zones.
 - 2.2 Determine the sprinkler occupancy classifications, minimum sprinkler flow and initial fire flow demands based on classifications for the site.
 - 2.3 Determine and analyse the town main water capabilities for the fire services serving the site to identify if fire pumps and fire tanks are required.
 - 2.4 Calculate the proposed fire pump flow and pressure and fire tank sizes.
 - 2.5 Prepare a comparison list of equipment which can be used across the site.
 - 3 Lay out the fire sprinkler system design.
 - 3.1 Determine and notate the exact location of sprinklers on the drawing according to relevant codes and standards.
 - 3.2 Determine and notate the most efficient and workable layout and location of sprinkler system components on the drawing according to regulatory requirements, standards and regulations.
 - 3.3 Design pipework layout and coordinate with building elements and services and identify pipework sizes and elevations across the systems.
 - 3.4 Calculate, check and notate dimensions on the drawing according to regulatory requirements, standards and regulations.
 - 3.5 Undertake hydraulic analysis of the fire systems using both hand calculation procedures and computer modelling programs.
 - 3.6 Validate fire pump and tank sizes with initial estimates.

- 3.7 Develop detailed designs of pipework for complicated interaction of pipework and building elements and services.
 - 3.8 Develop detailed designs of pipework configurations for fire tanks, fire pumps, brigade booster and suction points and alarm valves, including manifold systems and flow switch arrangements.
- 4 Submit drawings for approval and finalise design process.
 - 4.1 Submit fire sprinkler system design drawings to relevant personnel within the scheduled timeframe.
 - 4.2 Make or negotiate required amendments to design drawings as required.
 - 4.3 Process and distribute final approved design drawings according to project and regulatory requirements, standards and regulations.
 - 4.4 Select fittings and components according to project and regulatory requirements, standards and regulations.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5006A Create detailed designs for fire sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5006 Create detailed designs for fire sprinkler systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSF5006A Create detailed designs for fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing fire sprinkler systems for four different types of buildings, including:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes:
 - effective and workable layout and location:
 - selection of cost-effective components and materials
 - consideration of:
 - penetrations
 - conflict with other services
 - work health and safety (WHS) risks
 - access constraints
 - installation problems
 - aesthetic requirements
 - efficiencies to facilitate work on site and reduce labour costing
 - negotiations regarding amendments:
 - non-compliance with applicable legislation, codes and standards
 - impact on installation risks and constraints
 - impact on cost-effectiveness

- level of accuracy required in detailed design drawings
- storage and sharing design drawings
- naming conventions for design drawings and drawing register
- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
 - proprietary hydraulic calculation software
- relevant current legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the Building Code of Australia (BCA)
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - jurisdictional authorities in addition to the BCA and NCC
 - other fire system standards commonly required by building insurers
- fire systems technology and components for water-based systems:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - discharge nozzles
 - pipework
 - pipework supports
 - system valves
 - zone valves
 - sprinkler heads
 - Pipework fittings
 - control valves
- purpose and operation of fire systems:
 - layout
 - system operation
 - performance requirements
 - maintenance standards
 - system activation and operation

- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- regulatory approval and fire systems design certification processes
- compliant designs for fire sprinkler systems for a range of types of sites, including:
 - low-rise buildings
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
- installation methods:
 - access requirements
 - WHS requirements
- sustainability requirements and ratings:
 - energy conservation
 - water conservation
- pipe fabrication methods and constraints
- mathematic principles, equations and calculation methods:
 - flow calculations:
 - area of operations
 - discharge rates and quantities
 - discharge times
 - pressure gain and loss
 - K-factors
 - pressure, temperature and volume relationship
 - Hazen-Williams equation
 - Darcy-Weisbach equation
 - computational fluid dynamics
- project drawings and documentation:
 - architectural
 - structural
 - mechanical
 - electrical
 - hydraulic
 - fire engineer's or estimator's specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5007 Create detailed designs for hydrant and hose reel systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSFS5007A Create detailed designs for hydrant and hose reel systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to obtain, process and set up drawings for the detailed design of hydrant and hose reel systems for low to high-rise buildings over 25 metres and 45 metres in height.

This unit of competency supports the role of fire systems designers and hydraulic design consultants who manage their own work and take responsibility for assessing and selecting component requirements, setting out the locations of components and creating final notated drawings for hydrant and hose reel systems.

The role may involve interaction with fire engineers, architects, contractors, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes, including the National Construction Code (NCC).

This unit does not apply to fire systems for special hazard locations.

Licensing, legislative, regulatory or certification requirements may apply to this unit.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Set up fire systems design drawings.
 - 1.1 Access and review project drawings and documentation.
 - 1.2 Clean drawings to leave minimal essential information.
 - 1.3 Import layers showing designs of other services into clean architectural or structural drawings.
 - 1.4 Add details from drawings of the floor level above, if these affect the design.
 - 1.5 Process the detailed design drawings in accordance with workplace procedures.

- 2 Lay out the hydrant and hose reel design.
 - 2.1 Conduct a site visit if possible, to confirm dimensions and assess installation risks and constraints.
 - 2.2 Determine the exact location of hydrants and hose reels and notate on the drawing according to relevant codes and standards.
 - 2.3 Determine the most efficient and workable layout and location of hydrant and hose reel system components and notate on the drawing.
 - 2.4 Calculate and check dimensions and notate on the drawing.

- 3 Submit drawings for approval and finalise design process.
 - 3.1 Submit fire hydrant and hose reel system design drawings to relevant persons within the scheduled timeframe.
 - 3.2 Make or negotiate amendments to design drawings as required.
 - 3.3 Process and distribute final approved design drawings according to project and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5007A Create detailed designs for hydrant and hose reel systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5007 Create detailed designs for hydrant and hose reel systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSF5007A Create detailed designs for hydrant and hose reel systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- producing fully compliant designs for hydrant and hose reel systems for the following sites:
 - low-rise building
 - medium-rise building
 - high-rise building (over 25 metres)
 - building over 45 metres in height
 - building classifications in the National Construction Code (NCC).
- processing design drawings using parametric modelling software and workplace procedures.

Designs for all the above include:

- fire engineer's designs for alternative solutions
- technical issues impacting on hydrant and hose reel system designs
- relevant regulatory approval and fire systems design certification processes.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes
- level of accuracy required in detailed design drawings
- naming conventions for design drawings and drawing register
- fire science:
 - fire behaviour and dynamics
 - impact of fire on structures and materials
 - products of combustion

- fire control strategies
- fire retardants
- fire detection technologies
- fire suppression technologies
- fire containment
- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
 - proprietary project management software
 - proprietary hydraulic calculation software
 - parametric modelling software
- relevant current legislation, codes and standards:
 - building acts
 - building regulations
 - infrastructure supply regulations
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - other fire system standards commonly required by building insurers
- protection requirements for different buildings
- fire systems technology and components for hydrant and hose reel systems
- purpose and operation of fire systems:
 - layout
 - system operation
 - performance requirements
 - maintenance standards
 - system activation and operation
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- passive fire safety elements:
 - identification of passive elements
 - impact of fire systems design on passive elements
 - specifications required to safeguard integrity of passive fire element performance where penetrations are necessitated by the fire systems design
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services
- basic principles of structural engineering

- characteristics of building materials
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
- on-site issues that can arise during the construction phase and impose changes to the designs of fire systems and other services
- installation methods:
 - access requirements
 - work health and safety (WHS) requirements
- sustainability requirements and ratings:
 - energy conservation
 - water conservation
- pipe fabrication methods and constraints
- mathematical principles, equations and calculation methods:
 - financial calculations, for example to assess cost-effectiveness of fire systems
 - trigonometry, for example to amend dimensions of pipe allowing for fittings
- flow calculations:
 - area of operations
 - discharge rates and quantities
 - discharge times
 - pressure gain and loss
 - K-factors
 - pressure, temperature and volume relationship
 - Hazen-Williams equation
 - Darcy-Weisbach equation
 - computational fluid dynamics
- principles of organic and inorganic chemistry
- basic principles of thermodynamics:
 - effects of heat
 - stratification of gases
 - smoke and heat dynamics
- contractual processes
- project drawings:
 - architectural
 - structural
 - mechanical

- electrical
- hydraulic
- fire engineer's or estimator's specifications
- efficient and workable layout and location considerations:
 - selection of cost-effective components and materials
 - penetrations
 - conflict with other services
 - WHS risks
 - access constraints
 - installation problems
 - aesthetic requirements
 - efficiencies to facilitate work on site and reduce labour costing
- negotiations regarding amendments to design drawings which may arise due to:
 - non-compliance with applicable legislation, codes and standards
 - impact on installation risks and constraints
 - impact on cost-effectiveness
- hydrant and hose reel system components:
 - hose reels
 - hydrant valves
 - booster valves.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5008 Create detailed designs for fire detection and warning systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSFS5008A Create detailed designs for fire detection and warning systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to obtain, process and set up drawings for the detailed design of fire detection and warning systems low to high-rise buildings over 25 metres and 50 metres in height.

The unit involves assessing and selecting component requirements, setting out the locations of components and creating final notated drawings.

This unit of competency supports the role of fire systems' designers with responsibility for creating detailed designs for fire detection and warning systems.

The role may involve interaction with fire engineers, architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes, including the National Construction Code (NCC).

Licensing, legislative, regulatory or certification requirements may apply to this unit, requirements should be confirmed with the relevant government body.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Set up fire systems design drawings.
 - 1.1 Request and obtain project drawings and documentation and name and file according to workplace procedures.
 - 1.2 Clean drawings to leave minimal essential information.
 - 1.3 Import layers showing designs of other services into clean architectural or structural drawings.
 - 1.4 Add details from drawings of the floor level above, if these affect the design.
 - 1.5 Process detailed design drawings according to workplace procedures.
- 2 Lay out the fire systems design.
 - 2.1 Determine the exact location of the fire detection and warning system and notate on the drawing.
 - 2.2 Determine the most efficient and workable layout and location of fire detection and warning systems components and notate on the drawing.
 - 2.3 Calculate and check dimensions and notate on the drawing.
- 3 Specify component capacities and characteristics.
 - 3.1 Complete electrical calculations to assess requirements and confirm cable ranges.
 - 3.2 Specify components which are most suitable to the application.
 - 3.3 Design and specify electronic interfaces with other services.
 - 3.4 Prepare system performance requirements and commissioning procedures and specifications according to relevant codes and standards and component manufacturer's recommendations, workplace and project requirements.
- 4 Submit drawings for approval and finalise design process.
 - 4.1 Submit fire detection and warning system design drawings to relevant personnel within the scheduled timeframe.
 - 4.2 Make or negotiate required amendments to design

drawings as required.

- 4.3 Process and distribute final approved design drawings according to project requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5008A Create detailed designs for fire detection and warning systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5008 Create detailed designs for fire detection and warning systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSF5008A Create detailed designs for fire detection and warning systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- producing fully compliant designs for fire detection and warning systems for the following sites:
 - low-rise building
 - medium-rise building
 - high-rise building (over 25 metres)
 - building over 50 metres in height
 - building classifications in the National Construction Code (NCC).
- processing design drawings using parametric modelling software which include:
 - relevant standards, codes, workplace procedures, regulatory and manufacturer requirements within agreed project timeframes
 - relevant regulatory approval and fire systems design certification processes
 - technical issues impacting on fire detection and occupant warning system designs
 - fire engineer's designs for alternative solutions.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes
- level of accuracy required in detailed design drawings
- naming conventions for design drawings and drawing register
- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet

- parametric modelling software
- BASIC computer programming language
- current legislation, codes and standards:
 - building acts
 - building regulations
 - infrastructure supply regulations
 - Building Code of Australia (BCA)
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - jurisdictional authorities in addition to the BCA and NCC
 - other fire system standards commonly required by building insurers
- protection requirements for different buildings
- purpose and operation of fire systems:
 - layout
 - special products and hazards
 - system operation
 - performance requirements
 - maintenance standards
 - system activation and operation
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
- installation methods:
 - access requirements
 - work health and safety (WHS) requirements
- sustainability requirements and ratings relating to:
 - energy conservation
- electrical and electronics theory:
 - units used to measure current (alternating current (AC) and direct current (DC)), power, capacitance, inductance and sound attenuation
 - definition of voltage ratings and requirements applicable to fire detection and warning systems as defined in communication and electrical safety regulations, including extra-low voltage (ELV), low voltage (LV) and hazardous voltages

- basic operation of common electronic and electrical components used in fire detection and warning systems including:
 - basic operation of communication protocols on addressable systems
 - peripheral devices (printers)
 - interfaces to other communication systems to high level or low level
- communication technologies:
 - data transfer
 - networking
 - communication protocols
 - radio frequency technologies
- acoustics and speech intelligibility for occupant warning systems
- financial management:
 - budgeting
 - cost-effectiveness
- contractual processes
- project drawings and documentation:
 - architectural
 - structural
 - mechanical
 - electrical
 - hydraulic
 - water-based fire suppression systems
 - fire engineer's or estimator's specifications
- efficient and workable layout and location relating to:
 - penetrations
 - conflict with other services
 - interfaces with other services
 - WHS risks
 - access constraints
 - installation problems
 - aesthetic requirements
 - efficiencies to facilitate work on site and reduce labour costing
 - selection of cost-effective components and materials
- detection and warning system components:
 - EWIS
 - fire detection and alarm systems
 - smoke control systems
 - emergency lighting systems
 - manual call buttons
 - amplifiers

- speakers
- emergency lighting
- fire alarm and control panels:
 - conventional
 - addressable
- detectors:
 - heat
 - smoke
 - flame sensing
 - spot
 - projected beam
 - aspiration type
- power source
- batteries
- cabling
- fireproof cable
- electrical calculations:
 - the voltage drop in a wiring path given the required electrical parameters
 - battery capacity requirements given the required performance parameters
 - power supply and battery charge capacity requirements given the required performance parameters
 - Cable Services Australia (CSA) cable size and cabling medium type given the required electrical performance parameters
 - total power supply consumption requirements of field equipment in normal and active (alarm) state given the required electrical performance parameters of equipment installed
 - the number of points, circuits and zones on a system given the required performance parameters of a wiring path
- negotiations regarding amendments to design drawings arising due to:
 - non-compliance with applicable legislation, codes and standards
 - impact on installation risks and constraints
 - impact on cost-effectiveness.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5009 Create detailed designs for fire systems' water supplies

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSFS5009A Create detailed designs for fire systems' water supplies. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to obtain, process and set up drawings for the detailed design of water supplies for fire systems. The unit also involves assessing and selecting component requirements, setting out the locations of components and creating final notated drawings.

This unit of competency supports the role of fire systems designers with responsibility for creating detailed designs for water supplies for fire systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Confirm water-based fire systems designs. | 1.1 Request, receive, name and file relevant project drawings and documentation according to workplace procedures. |
| | 1.2 Confirm details and dimensions and to assess water supply installation risks and constraints. |

- 1.3 Notate the exact location of fire system components on detailed design drawings according to relevant codes and standards.
 - 1.4 Name, file and back up the detailed design drawings according to workplace procedures.
 - 2 Calculate pipe sizes and pump and tank requirements.
 - 2.1 Determine the initial fire flow demands for the site based on the occupancy classifications.
 - 2.2 Analyse water flow and pressure test results to establish the minimum levels of available supply in accordance with local jurisdictional requirements.
 - 2.3 Determine and analyse the town main water capabilities for the fire services serving the site to identify if fire pumps and fire tanks are required.
 - 2.4 Consider options for cost-effective and efficient solutions with reference to manufacturer specifications for the performance of components and according to workplace policies.
 - 3 Lay out the water supply design.
 - 3.1 Identify methodologies used in making town main connections.
 - 3.2 Determine and notate the most efficient and workable layout and location of water supply components on the drawings according to workplace procedures.
 - 3.3 Calculate, check and notate dimensions on the drawings according to relevant codes and standards and component manufacturer's recommendations and workplace procedures.
 - 3.4 Determine the locations of backflow prevention devices and their accessibility.
 - 3.5 Review proposed locations of booster connections with local fire authority.
 - 4 Submit drawings for approval and finalise
 - 4.1 Submit water supply design drawings to relevant personnel within the scheduled timeframe.

- design process.
- 4.2 Make or negotiate required amendments to design drawings as required.
 - 4.3 Process and distribute final approved design drawings according to relevant codes and standards and component manufacturer's recommendations workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5009A Create detailed designs for fire systems' water supplies.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5009 Create detailed designs for fire systems' water supplies

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSF5009A Create detailed designs for fire systems' water supplies. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- effectively applying principles relating to the design of water supplies for fire systems for four types of buildings including a:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes
- project drawings and documentation:
 - proposed water-based fire system designs
 - mechanical
 - electrical
 - hydraulic
- level of accuracy required in detailed design drawings
- naming conventions for design drawings and drawing register
- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
- relevant current legislation, codes and standards:

- building Acts
- building regulations
- infrastructure supply regulations
- the Building Code of Australia (BCA)
- National Construction Code (NCC)
- Australian standards for fire systems
- international standards for fire systems
- jurisdictional authorities in addition to the BCA and NCC
- other fire system standards commonly required by building insurers
- protection requirements for different buildings including:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- fire systems' technology and components
- fire system water supply technology and components:
 - electric pumps
 - diesel pumps
 - tanks
 - pressure vessels
 - booster configurations
 - components for water recovery systems
- purpose and operation of fire systems:
 - layout:
 - consideration of a range of sustainable options for producing the required water pressure for water-based fire systems
 - selection of cost-effective components and materials
 - consideration of:
 - conflict with other services
 - work health and safety (WHS) risks
 - access constraints
 - installation problems
 - aesthetic requirements
 - efficiencies to facilitate work on site and reduce labour costing
 - performance requirements
 - maintenance standards

- characteristics and limitations of products and materials used in water supplies for fire systems and issues relating to material compatibility
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - structural engineer
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
 - civil engineer
 - fire engineer
 - building (private) certifier or surveyor
- installation methods:
 - access requirements
 - WHS requirements
- water supplies:
 - common water sources
 - conservation requirements
 - in-ground reticulation
 - booster configurations
- fluid mechanics and hydraulics relating to:
 - water supply
 - pressure
 - tank selection
 - pressure vessels
 - pipe range
- fluid dynamics, hydraulics and the calculations required for the design of water supplies for fire systems
- sustainability requirements and ratings:
 - energy conservation
 - water conservation
- pipe fabrication methods and constraints
- mathematic principles, equations and calculation methods:
 - flow calculations, including:
 - pressure gain and loss
 - K-factors
 - Hazen-Williams equation
 - Darcy-Weisbach equation
 - Colebrook White equations and/or tables

- Manning formula and/or tables
- AS 2200 Design charts for water supply and sewerage
- computational fluid dynamics.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5010 Provide documentation and support for fabrication of fire sprinkler systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSFS5010A Provide documentation and support for fabrication of fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to assess issues relating to on-site installation of pipework for sprinkler systems. The unit also involves producing specifications and supporting documentation for the cost-effective fabrication of manageable pipework sections.

This unit of competency supports the role of fire systems designers with responsibility for creating specifications and drawings for the fabrication of pipework sections for fire sprinkler systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|--|-----|--|
| 1 Determine the impact on fabrication plans of installation risks and constraints. | 1.1 | Identify on-site work health and safety (WHS) risks relating to the installation of sprinkler systems. |
| | 1.2 | Identify constraints relating to access to on-site installation locations for sprinkler system pipes and |

- components.
- 1.3 Consider impact of installation risks and constraints on fabrication plans for fire sprinkler system pipes and components and determine cost-effective and manageable solutions.
- 2 Plan and specify pipes, fittings and components.
- 2.1 Obtain and analyse current accurate drawings and documentation, and take measurements on-site during construction if possible, to confirm the accuracy of building dimensions.
 - 2.2 Check and confirm the dimensions and design drawing locations of the selected fittings and components.
 - 2.3 Plan and specify fittings and components for ease and safety of installation and to provide cost-effective solutions.
 - 2.4 Calculate, specify and number pipe lengths on relevant drawings.
 - 2.5 Review and apply efficiency and cost effectiveness of relevant pipe materials, pipe fitting methodologies for design.
- 3 Produce fabrication documentation.
- 3.1 Confirm and specify appropriate pipe materials and features.
 - 3.2 Consult supplier as necessary to discuss and negotiate efficient and cost-effective pipe fabrication options.
 - 3.3 Number and detail individual pipe specifications on fabrication lists.
 - 3.4 Supply drawings to support fabrication specifications, as required.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5010A Provide documentation and support for fabrication of fire sprinkler systems.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5010 Provide documentation and support for fabrication of fire sprinkler systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSF5010A Provide documentation and support for fabrication of fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- producing pipe fabrication documentation for fire sprinkler system design projects for four types of buildings including a:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes
- level of accuracy required in detailed design drawings
- naming conventions for design drawings and drawing register
- relevant current legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the Building Code of Australia (BCA)
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - jurisdictional authorities in addition to the BCA and NCC
 - other fire system standards commonly required by building insurers

- protection requirements for different buildings, including:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- fire systems' technology and components, including water-based systems:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - gaseous suppression systems
 - water spray systems
 - water mist systems
 - wet chemical suppression systems
 - foam suppression systems
 - hangers
 - sprinkler heads
 - nozzles
 - elbows
 - tees
 - pumps
 - tanks
- purpose and operation of fire systems:
 - layout
 - location:
 - ceiling space
 - roof space
 - under-floor
 - under-soffit
 - special products and hazards
 - system operation:
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - ESFR
 - gaseous suppression systems

- water spray systems
- water mist systems
- foam suppression systems
- performance requirements and technical issues impacting on fire sprinkler systems designs
- maintenance standards
- system activation:
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - ESFR
 - gaseous suppression systems
 - water spray systems
 - water mist systems
 - foam suppression systems
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- installation risks and constraints impacting on pipe fabrication specifications for fire sprinkler systems
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - structural engineer
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
 - civil engineer
 - fire engineer
 - building (private) certifier or surveyor
- on-site issues that can arise during the construction phase and impose changes to the designs of fire systems and other services:
 - risks:
 - manual handling
 - confined spaces
 - working at height
 - installation methods:
 - access requirements:
 - height of pipe
 - length of pipe
 - weight of pipe and materials

- distance from beams
- distance from walls
- work health and safety (WHS) requirements
- water supplies:
 - common water sources
 - conservation requirements
 - in-ground reticulation
 - booster configurations
- fluid mechanics and hydraulics relating to pipe range
- sustainability requirements and ratings:
 - energy conservation
 - water conservation
- pipe fabrication methods and constraints
- pipe specifications:
 - length
 - dimension
 - pipe size
 - material:
 - black steel
 - galvanised
 - hot dip galvanised
 - high density polyethylene (HDPE)
 - chlorinated polyvinyl chloride (CPVC)
- pipe connection specifications:
 - flange
 - roll grooved
 - threaded
 - compression
 - fusion welded
 - chemical (glue)
- valve specifications:
 - sluice
 - gate
 - butterfly
 - globe
 - ball
 - solenoid
 - diaphragm
 - pressure reducing
 - flow restricting

- 3-way
- mathematic principles, equations and calculation methods:
 - financial calculations, for example to assess cost-effectiveness of fire systems
- codes, standards, legislation and regulatory requirements
- access to manufacturer's information.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5011 Provide design documentation and review and support fire system installation processes

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSFS5011A Provide design documentation and review and support fire system installation processes. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to develop detailed drawings and notes for the fire systems installation team from approved detailed fire systems design drawings. The unit also covers the outcomes required to assist and support the installation team when changes to detailed designs may be required owing to contingencies encountered on-site.

This unit of competency supports the role of fire systems designers whose work involves the preparation of detailed documentation to support the installation of fire systems and the provision of troubleshooting advice and drawings for solutions to on-site issues.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|--|-----|---|
| 1 | Produce installation drawings and documentation. | 1.1 | Check approved detailed design drawings of fire systems to ensure that installation implications of required changes have been addressed. |
|---|--|-----|---|

- | | | |
|---|--|--|
| | 1.2 | Use approved detailed design drawings of fire systems to create installation drawings. |
| | 1.3 | Use detailed design specifications of fire systems to notate the installation drawings with the location of specific components of the fire system. |
| 2 | Review drawings prior to installation. | |
| | 2.1 | Monitor and record ongoing changes to detailed structural or other services' design drawings regularly. |
| | 2.2 | Consider the impact of structural and other services design changes on fire systems design and installation and propose and negotiate appropriate solutions with relevant project team members, as required. |
| | 2.3 | Amend fire systems installation drawings and documentation to incorporate accepted solutions according to workplace and project procedures. |
| 3 | Resolve on-site installation problems. | |
| | 3.1 | Record, prioritise and consider on-site installation issues in line with project timeframes. |
| | 3.2 | Propose and negotiate appropriate solutions with relevant project team members, as required. |
| | 3.3 | Amend fire systems installation drawings and documentation to incorporate accepted solutions as required. |
| | 3.4 | Communicate solutions to on-site fire system installation team members and supply amended documentation according to workplace and project procedures. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5011A Provide design documentation and review and support fire system installation processes.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5011 Provide design documentation and review and support fire system installation processes

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSF5011A Provide design documentation and review and support fire system installation processes. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- preparing accurate documentation and provision of ongoing support for the installation of fire systems in four projects and buildings, including for a:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- reading and interpreting drawings, plans, reports and specifications
- file sharing and storage processes
- communication processes
- workplace design tools and processes
- level of accuracy required in detailed design drawings
- naming conventions for design drawings and drawing register
- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
 - proprietary project management software
- relevant current legislation, codes and standards:
 - building Acts

- building regulations
- infrastructure supply regulations
- the Building Code of Australia (BCA)
- National Construction Code (NCC)
- Australian standards for fire systems
- international standards for fire systems
- jurisdictional authorities in addition to the BCA and NCC
- other fire system standards commonly required by building insurers
- protection requirements for different buildings, including:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- fire systems' technology and components:
 - water-based systems:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - gaseous suppression systems
 - water spray systems
 - water mist systems
 - wet chemical suppression systems
 - foam suppression systems
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - detection and warning systems:
 - occupant warning systems
 - emergency warning and intercommunications systems (EWIS)
 - fire detection and alarm systems
 - smoke control systems
 - emergency lighting systems
- purpose and operation of fire systems:
 - layout
 - special products and hazards

- system operation
- performance requirements
- maintenance standards
- system activation and operation
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- passive fire safety elements:
 - identification of passive elements
 - impact of fire systems design on passive elements
 - specifications required to safeguard integrity of passive fire element performance where penetrations are necessitated by the fire systems design
- basic principles of structural engineering
- characteristics of building materials
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
- on-site issues, including technical, that can arise during the construction phase and impose changes to the designs of fire systems and other services:
 - installation issues:
 - discrepancies between designed and actual structure
 - discrepancies between designed and actual systems for other services:
 - mechanical
 - hydraulic
 - electrical
 - errors in supplied materials and components
 - scheduling and sequencing changes
 - problems with access to installation locations of fire system components
 - installation implications:
 - on-site work health and safety (WHS) risks
 - manual handling
 - confined spaces
 - working at height
- installation methods:
 - access requirements:
 - height of pipe
 - length of pipe

- weight of materials
- distance from beams
- distance from walls
- WHS requirements
- sustainability requirements and ratings:
 - energy conservation
 - water conservation
- mathematic principles, equations and calculation methods relevant to the system type.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5013 Support commissioning processes and finalise fire systems design projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSFS5013A Support commissioning processes and finalise fire systems design projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to confirm the post-installation details of fire systems and produce amended drawings and documentation, and to prepare detailed commissioning procedures and specifications. The unit also covers reviewing issues and solutions arising during fire systems design projects and making subsequent improvements to fire systems design project processes.

This unit of competency supports the role of fire systems designers with responsibility for producing 'as built' drawings, block plans, tactical fire plans, and operations and maintenance manuals for fire systems.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|---|-----|--|
| 1 | Produce accurate final drawings for fire systems. | 1.1 | Document progressive changes to fire systems design drawings resulting from construction phase issues according to workplace and project procedures. |
|---|---|-----|--|

- 1.2 Confirm and record final component sizes, locations and building dimensions.
 - 1.3 Prepare, name, notate, file and submit accurate 'as built' drawings according to workplace procedures and project requirements.
 - 1.4 Produce appropriate block plans and tactical fire plans as required.
- 2 Prepare commissioning details, and operation and maintenance manuals for fire systems.
 - 2.1 Prepare system performance requirements and commissioning procedures and specifications according to relevant codes and standards and component manufacturer's recommendations and workplace and project requirements.
 - 2.2 Prepare standard operating procedures (SOPs) for the fire system based on relevant codes and standards and component manufacturer's recommendations.
 - 2.3 Produce regular maintenance procedures for the fire system based on codes and standards component manufacturer's recommendations and relevant regulatory requirements.
 - 2.4 Install operation and maintenance signage as required, according to relevant workplace, project and regulatory requirements codes and standards.
- 3 Review and evaluate the fire systems design process.
 - 3.1 Review and process project documentation including issues and their solutions.
 - 3.2 Discuss project issues and solutions with relevant workplace personnel and explore process improvement strategies.
 - 3.3 Amend project planning, methodologies and quality assurance systems to incorporate agreed process improvement strategies.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5013A Support commissioning processes and finalise fire systems design projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5013 Support commissioning processes and finalise fire systems design projects

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSF5013A Support commissioning processes and finalise fire systems design projects. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- preparing four final fire systems design project documentation, including drawings, specifications and commissioning support documentation, including for a:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes
- drawings, plans, reports and specifications
- level of accuracy required in detailed design drawings
- naming conventions for design drawings and drawing register
- relevant regulatory approval and fire systems design certification processes
- relevant current legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the Building Code of Australia (BCA)
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - jurisdictional authorities in addition to the BCA and NCC
 - other fire system standards commonly required by building insurers

- protection requirements for different buildings including low-rise, medium-rise, high-rise (over 25 metres) and buildings over 45 metres in height
- fire systems' technology and components:
 - water-based systems:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - water spray systems
 - water mist systems
 - gaseous suppression systems
 - wet chemical suppression systems
 - foam suppression systems
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - detection and warning systems:
 - occupant warning systems
 - emergency warning and intercommunications systems (EWIS)
 - fire detection and alarm systems
 - smoke control systems
 - emergency lighting systems
- purpose and operation of fire systems:
 - layout
 - special products and hazards
 - system operation
 - performance requirements:
 - for water-based systems:
 - speed of response
 - time taken to reach full-flow conditions
 - area of coverage
 - nozzle locations
 - droplet profile and characteristics
 - duration of response
 - for detection and warning systems:
 - correct sensors
 - sensitivity to fire size
 - speed of detection and response
 - fire location coverage

- maintenance standards
- system activation and operation
- passive fire safety elements:
 - identification of passive elements
 - impact of fire systems design on passive elements
 - specifications required to safeguard integrity of passive fire element performance where penetrations are necessitated by the fire systems design
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- maintenance procedures:
 - site-specific maintenance instructions
 - manufacturer's specific maintenance instructions
 - local government regulations
 - Australian standards, such as:
 - AS 1851 Routine service of fire protection systems and equipment
 - safety data sheets (SDS).
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services
- instruments used in commissioning and measuring fire system performance:
 - commissioning procedures and specifications:
 - procedures listed in Australian standards, such as:
 - AS 2118.1 Automatic fire sprinkler systems - General Systems
 - AS 2118.4 Automatic fire sprinkler systems - Sprinkler protection for accommodation buildings not exceeding for storeys in height
 - AS 2118.6 Automatic fire sprinkler systems - Combined sprinkler and hydrant systems in multi-storey buildings
 - AS 1670.1 Fire, detection, warning, control and intercom systems - System design, installation and commissioning - Fire
 - AS 1670.4 Fire, detection, warning, control and intercom systems - System design, installation and commissioning - Emergency warning and intercom systems
 - AS 2419.1 Fire hydrant installations - System design, installation and commissioning
 - AS 2441 Installation of fire hose reels
 - AS 2941 Fixed fire protection installations - Pumpset Systems
 - AS ISO 14520.1 Gaseous fire extinguishing system - Physical properties and system design - General requirements
 - U.S. National Fire Protection Association (NFPA) codes
 - factory mutual data sheets
 - manufacturer recommendations

- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - structural engineer
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
 - civil engineers
 - fire engineers
 - building(private) certifier or surveyor
- contractual processes
- signage:
 - technical design data, including systems performance and layout on a block plan
 - pressure switch setting plaque
 - interface cause and effect drawing
 - operating instructions
 - manufacturer's technical plates or labels
 - signs in the pump room for water-based system:
 - system pressure
 - town mains pressure
 - pump cut-in pressure
 - pressure gauge schedule
 - block plans
 - visual and audible alarms for gaseous suppression systems, including:
 - strobes lights
 - speakers and horns
 - system interface matrix
 - block plans
 - signage for detection and warning systems:
 - system interface matrix
 - block plans
 - device lists.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5014 Conduct annual fire systems inspections

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSFS5014A Conduct annual fire systems certification inspections. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to assess all types of fire systems in all types of buildings to ensure that the systems comply with applicable legislation and will perform in the event of a fire.

This unit of competency supports the role of annual inspectors of fire systems with responsibility for inspecting existing fire systems; assessing compliance with the relevant applicable legislation, codes and standards; and advising whether they continue to perform to current fire safety standards.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | | |
|---|--|-----|--|
| 1 | Prepare for annual fire systems inspections. | 1.1 | Schedule annual fire systems inspections in a timely manner and in consultation with relevant stakeholders, as required. |
| | | 1.2 | Obtain and review current building plans and identify and note modifications made to the building since the |

- last inspection.
- 1.3 Review and use information regarding the current and historical legislation, codes and standards and fire engineered solutions applicable to fire systems to inform inspection planning.
 - 1.4 Review and use information regarding the validity of fire systems' compliance documentation to inform inspection planning.
 - 1.5 Plan fire systems certification inspections to ensure efficient and comprehensive implementation.
- 2 Conduct annual fire systems inspections.
 - 2.1 Inspect and assess each aspect of each fire system for compliance with the applicable current and historical legislation, codes, standards, regulatory requirements and document findings.
 - 2.2 Assess and record the current performance level of each fire system.
- 3 Produce annual fire systems inspection reports and communicate findings.
 - 3.1 Analyse the findings of inspections and identify and record works required to address shortfalls in fire systems' compliance or performance according to regulatory requirements.
 - 3.2 Produce and process reports according to regulatory requirements.
 - 3.3 Communicate the findings of the report to relevant stakeholders according to regulatory requirements, and carefully explain works required to rectify fire systems.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5014A Conduct annual fire systems certification inspections.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5014 Conduct annual fire systems inspections

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSF5014A Conduct annual fire systems certification inspections. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- preparing for, conducting and reporting on annual fire systems inspections for four types of fire systems in buildings with different construction and modification histories, including:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- auditing processes and protocols:
 - compliance documentation:
 - fire safety schedules
 - inspection and testing logbooks
 - maintenance, repair and replacement documentation
 - roles and responsibilities of relevant professional personnel:
 - fire engineer
 - fire brigade personnel
 - building surveyor or certifier
 - persons with regulatory authority
 - architect
 - structural engineer
 - fire systems' designer

- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
- drawings, plans, reports and specifications
- types of buildings, including:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- relevant current and historical legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the Building Code of Australia (BCA)
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - other fire system standards commonly required by building insurers
 - jurisdictional authorities in addition to the BCA and NCC
- protection requirements for different buildings
- fire systems' technology and components:
 - water-based systems, including:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - detection and warning systems:
 - occupant warning systems

- emergency warning and intercommunications systems (EWIS)
- fire detection and alarm systems
- smoke control systems
- emergency lighting systems
- special hazard fire systems:
 - foam systems (low expansion, medium expansion and high expansion)
 - gaseous agent systems (carbon dioxide, inert gas and halocarbon gases)
 - water spray systems (deluge, medium/high velocity water spray and high-speed deluge)
 - chemical powder systems
 - wet chemical systems
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services
- passive fire safety elements:
 - identification of passive elements
 - requirements for safeguarding the integrity of passive fire element performance where penetrations have been made
- basic principles of structural engineering
- characteristics of building materials
- construction industry terminology
- contractual processes.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5015 Prepare documentation for annual fire systems inspections

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSFS5015A Assess documentation for annual fire systems certification inspections. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency supports annual inspections of fire systems. The unit of competency specifies the outcomes required to research the applicable regulatory requirements for existing fire systems in all types of buildings and to assess compliance documentation to determine whether requirements are met.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

CPCSFS5014 Conduct annual fire systems inspections

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Determine the installation dates for fire systems.

1.1 Access, interpret and document the construction dates and modification histories of buildings to be inspected.

1.2 Identify the types of fire systems installed in buildings to be inspected from compliance documentation.

1.3 Identify the installation dates for individual fire systems in buildings to be inspected.

- 2 Research and interpret the applicable codes and standards.
 - 2.1 Research and identify the current and historical legislation, codes and standards applicable to individual fire systems at the time of installation, or modification of the building.
 - 2.2 Research and interpret the detailed requirements of applicable historical legislation, codes and standards and fire engineered solutions.
 - 2.3 Document and report any disparity between historical legislation, codes and standards applicable and fire engineered solutions applicable at the installation or modification date and current fire safety requirements to relevant stakeholders.
 - 2.4 Prepare checklists and notes on applicable current and historical codes and standards to assist the annual inspection process.
- 3 Assess and report on fire system compliance documentation.
 - 3.1 Review and check schedules for the inspection, testing and maintenance of fire safety systems for compliance with current regulatory requirements.
 - 3.2 Review and check documentation for regular fire systems inspection and testing activities for currency and completeness.
 - 3.3 Identify and note information regarding non-compliance issues and defects.
 - 3.4 Request and review documentary evidence of resolution of non-compliance issues and defects if available.
 - 3.5 Prepare checklists and notes on non-compliance issues and defects identified from compliance documentation to assist the annual inspection process.
 - 3.6 Prepare and process reports detailing anomalies and omissions in fire systems' compliance documentation according to workplace and regulatory requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSFS5015A Assess documentation for annual fire systems certification inspections.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5015 Prepare documentation for annual fire systems inspections

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSF5015A Assess documentation for annual fire systems certification inspections. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- preparing relevant documentation of annual fire systems inspections that apply to existing fire systems in a range of buildings, including:
 - commercial building
 - factory
 - residential nursing home
 - high-rise building.

The activity should include preparation of fire safety schedules and inspection, testing and maintenance documentation.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance documentation:
 - fire safety schedules
 - inspection and testing logbooks
 - maintenance, repair and replacement documentation
- computer software functions and operation, including relevant proprietary software
- reading and interpreting drawings and reports
- relevant current and historical legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the Building Code of Australia (BCA)
 - National Construction Code (NCC)

- Australian standards for fire systems
- international standards for fire systems
- jurisdictional authorities in addition to the BCA and NCC
- other fire system standards commonly required by building insurers
- protection requirements for different buildings, including:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- fire systems' technology and components:
 - water-based systems:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - detection and warning systems:
 - occupant warning systems
 - emergency warning and intercommunications systems (EWIS)
 - fire detection and alarm systems
 - smoke control systems
 - emergency lighting systems
 - special hazard fire systems:
 - foam systems (low expansion, medium expansion and high expansion)
 - gaseous agent systems (carbon dioxide, inert gas and halocarbon gases)
 - water spray systems (deluge, medium/high velocity water spray and high-speed deluge)
 - chemical powder systems
 - wet chemical systems
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services

- passive fire safety elements:
 - identification of passive elements
 - requirements for safeguarding the integrity of passive fire element performance where penetrations have been made
- basic principles of structural engineering
- characteristics of building materials
- construction industry terminology
- sustainability requirements and ratings:
 - energy conservation
 - water conservation.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSFS5017 Create detailed designs for foam suppression systems

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Application reformatted and typographical error in Knowledge Evidence corrected.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to obtain, process and set up drawings for the detailed design of foam suppression systems. The unit also involves assessing and selecting component requirements, setting out the locations of components, and creating final notated drawings.

This unit of competency supports the role of fire systems designers with responsibility for creating detailed designs for sprinkler fire suppression systems.

Fire systems designs are limited to those within the deemed-to-satisfy provisions of the Building Code of Australia (BCA) or detailed fire systems designs for alternative solutions designed by fire engineers. This unit does not apply to fire systems for special hazard locations.

Licensing, legislative, regulatory or certification requirements may apply to this unit and so the varying state or territory requirements should be confirmed with the relevant body.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Set up fire systems design drawings.	<ul style="list-style-type: none">1.1 Request, receive, name and file relevant project drawings and documentation according to workplace procedures.1.2 Clean drawings to leave minimal essential information.1.3 Import layers showing designs of other services into clean architectural or structural drawings.1.4 Add details from drawings of the floor of the level above, if these affect the design.1.5 Name, file and back up the detailed design drawings according to workplace procedures.
2 Perform preliminary data and calculations.	<ul style="list-style-type: none">2.1 Develop floor area calculations to determine the number of sprinklers zones and required fire hydrant to be considered flowing.2.2 Determine the town main capabilities for the fire services serving the site.2.3 Determine the types of foams applicable for the site.2.4 Determine the minimum hydrant flow for the site.2.5 Determine the initial fire flow demands for the site based on the occupancy classifications.2.6 Analyse the town main water supply capabilities to determine if fire pumps and fire tanks are required.2.7 Calculate the proposed fire pump flows and pressure and fire tanks sizes.2.8 Prepare dimensional drawings for equipment spatial allocations.2.9 Sight fire brigade response point, boosters and tank suction points with stakeholders.2.10 Prepare a comparison list of equipment which can be used across the site.
3 Lay out the foam	<ul style="list-style-type: none">3.1 Confirm dimensions and assess installation risks and

- suppression system design.
- 3.2 Determine and notate the exact location of foam nozzles on the drawing according to relevant codes and standards.
 - 3.3 Determine and notate the most efficient and workable layout and location of sprinkler system components on the drawing according to workplace procedures.
 - 3.4 Design pipework layout and coordinate with building elements and services and identify pipework sizes and elevations across the system(s).
 - 3.5 Calculate, check and notate dimensions on the drawing according to workplace procedures.
 - 3.6 Undertake hydraulic analysis of the fire systems using both hand calculation procedures and computer modelling programs.
 - 3.7 Validate fire pump and tanks sizes versus initial estimates.
 - 3.8 Develop detail designs of pipework for complicated interaction of pipework and building elements and services.
 - 3.9 Develop detail designs of pipework configurations for fire tanks, fire pumps, brigade booster and suction points, alarm valves including manifold systems, and flow switch arrangements.
 - 3.10 Develop detail designs of pipework configurations for the foam tanks, foam pumps, injections devices and alarm valves.
- 4 Submit drawings for approval and finalise design process.
- 4.1 Submit foam suppression system design drawings to relevant personnel within the scheduled timeframe.
 - 4.2 Make or negotiate required amendments to design drawings as required.
 - 4.3 Process and distribute final approved design drawings according to project and workplace requirements.
 - 4.4 Select and order fittings and components according to project and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSF5017 Create detailed designs for foam suppression systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Application reformatted and typographical error in Knowledge Evidence corrected.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- effectively designing three different foam suppression systems for three different building types.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes:
 - effective and workable layout and location:
 - selection of cost-effective components and materials
 - consideration of:
 - penetrations
 - conflict with other services
 - work health and safety risks
 - access constraints
 - installation problems
 - aesthetic requirements
 - efficiencies to facilitate work on site and reduce labour costing
 - negotiations regarding amendments:
 - non-compliance with applicable legislation, codes and standards
 - impact on installation risks and constraints
 - impact on cost-effectiveness
- relevant regulatory approval and fire systems design certification processes

- level of accuracy required in detailed design drawings
- naming conventions for design drawings and drawing register
- foam suppression systems using a range of water supplies, including:
 - town main
 - town main and elevated tank
 - town main with a 100% capacity tank
 - town main with a partial capacity tank
 - tank supply with multiple tank
 - water supply using dams, rivers and sea water
- fire science:
 - fire behaviour and dynamics
 - impact of fire on structures and materials
 - products of combustion
 - fire control strategies
 - fire retardants
 - fire detection technologies
 - fire suppression technologies
 - fire containment
- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
 - proprietary hydraulic calculation software
 - proprietary estimating software
 - parametric modelling software, such as Navis-Works or MEP-REVIT
- relevant current legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the Building Code of Australia (BCA)
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - other fire system standards commonly required by building insurers
- fire systems technology and components for foam suppression systems:
 - discharge nozzles
 - pipework
 - brackets
 - system and control valves

- zone valves
- fire panels
- hangers
- fittings
- purpose and operation of fire systems:
 - layout
 - system operation
 - performance requirements
 - maintenance standards
 - system activation and operation
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- passive fire safety elements:
 - identification of passive elements
 - impact of fire systems design on passive elements
 - specifications required to safeguard integrity of passive fire element performance where penetrations are necessitated by the fire systems design
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services
- basic principles of structural engineering
- characteristics of building materials
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - structural engineer
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
 - civil engineer
 - fire engineer
 - building (private) certifier
- onsite issues that can arise during the construction phase and impose changes to the designs of fire systems and other services
- installation methods:
 - access requirements
 - work health and safety (WHS) requirements
- hydraulic calculations and fluid mechanics and hydraulics relating to pipe range
- water and oil capture and onsite storage systems for environmental purposes
- sustainability requirements and ratings:

- energy conservation
- water conservation
- pipe fabrication methods and constraints
- foam suppression systems for a range of types of sites, including:
 - transformers
 - aircraft hangers
 - petroleum industry storage facilities
 - diesel, steam and gas turbine rooms
- commissioning of foam suppression systems:
 - pressure testing methodologies during the installation phases and their advantages and disadvantages:
 - use of water
 - use of compressed air
 - nitrogen cylinders
 - validating water supplies
 - validating tank in-fill flows
 - validating pump performance:
 - setting pressures for pump starts
 - setting pressures for jacking pump start/stop
 - setting pressure for pressure maintenance pump start/stop
 - reaction times to pumps starting:
 - high set pressures
 - low set pressures
 - validating sprinkler system performance:
 - Annubar at sprinkler valves or pumps
 - discharge rates and quantities
 - discharge times for various types of sprinkler systems:
 - at alarm valve
 - remote test valve
 - the role of the local fire authorities in commissioning fire systems
 - documentation to be completed and distributed
- technical issues impacting on foam suppression system designs
- mathematic principles, equations and calculation methods:
 - financial calculations, for example to assess cost-effectiveness of fire systems
 - trigonometry, for example to amend dimensions of pipe allowing for fittings
 - flow calculations:
 - area of operations
 - discharge rates and quantities
 - discharge times
 - pressure gain and loss

- K-factors
- pressure, temperature and volume relationship
- Hazen-Williams equation
- Darcy-Weisbach equation
- ColeBrook White equations and/or tables
- Manning Formula and/or tables
- AS 2200 Design charts for water supply and sewerage
- computational fluid dynamics
- principles of organic and inorganic chemistry
- principles of physical sciences:
 - Boyle's law
 - Charles' law
 - Dalton's law
 - Henry's law
- principles of thermodynamics:
 - effects of heat
 - stratification of gases
 - smoke and heat dynamics
- human psychology, especially fire avoidance behaviour
- project drawings and documentation:
 - architectural
 - structural
 - mechanical
 - electrical
 - hydraulic
 - fire engineer's or estimator's specifications.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSH3001 Fabricate shopfitting components using CNC machines

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCSH3001 Fabricate shopfitting components using CNC machines. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to program and use computer numerically-controlled (CNC) machines to fabricate components for shopfitting units. It includes inputting correct data into selected software programs and sequencing the fabrication process.

It applies to those who fabricate components for a range of shopfitting units in an off-site manufacturing premises ready for installation on commercial sites.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

No licensing, legislative or certification requirements apply to this unit of competency at the time of publication.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan and prepare to use CNC machines.
 - 1.1 Identify, read and interpret details of shopfitting components from job requirements, plans and specifications.
 - 1.2 Produce a full size set out of all shopfitting components and detail fabrication method, joint type, grain direction, and drawer and door clearance.
 - 1.3 Calculate material quantities for fabrication of shopfitting components from dimensions on plans.
 - 1.4 Develop an efficient cutting list to minimise waste.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others in the workplace.
 - 1.6 Identify workplace hazards and conditions, assess risks and implement risk controls following work health and safety requirements and environmental practices.
 - 1.7 Select, fit and used personal protective equipment (PPE) required for the task.
 - 1.8 Obtain, safely handle and prepare materials appropriate to the work application and locate ready for use.
 - 1.9 Check serviceability of CNC machinery, and identify, report and rectify faults.
 - 2 Prepare CNC program.
 - 2.1 Select appropriate CNC machine and software program for the task.
 - 2.2 Define the machine functions and select the appropriate program commands for the machine control system in preparation to perform and save programming operations for the fabrication process.
 - 2.3 Determine and check that programming terms, methods and data storage capacity are consistent with job requirements and machine specifications.
 - 2.4 Identify and select method of transferring programs into machine memory.
 - 2.5 Edit machine specification program, compensating for tool profiles, to produce the required straight and circular

tool movements.

- 3 Transfer and test machine controls.
 - 3.1 Load appropriate program into machine memory using selected method.
 - 3.2 Enter program following machine specifications to fabricate shopfitting components.
 - 3.3 Conduct a dry run simulation to test program operations.
 - 3.4 Recognise minor faults and problems with CNC machine operation, and select and apply appropriate action to overcome issues and meet project schedules.
 - 3.5 Edit program and alarm settings as required using the control station.

- 4 Fabricate components.
 - 4.1 Follow manufacturer specifications to fabricate components using automatic mode.
 - 4.2 Identity and legibly mark face and edge of each component following design specifications to assist with efficient and accurate assembly.
 - 4.3 Locate and arrange components ready for assembly to align with relevant plans and specifications.
 - 4.4 Store plans, specifications and set-outs for future reference.

- 5 Clean up.
 - 5.1 Clean CNC machinery, tools and equipment, check for serviceability and report damage or faults.
 - 5.2 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSH3001 Fabricate shopfitting components using CNC machines.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3001 Fabricate shopfitting components using CNC machines

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCSH3001 Fabricate shopfitting components using CNC machines. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by selecting, programming and using a computer numerically-controlled (CNC) machine to fabricate components as outlined below:

- select, edit, produce and trial a CNC machine program
- use a CNC machine to fabricate components for:
 - one point of sale counter with a minimum size of 2.4 metres in length
 - one showcase with a minimum size of 2.0 metres high and 1.8 metres wide, with doors and glass
 - and one of the following, which must include a stone or acrylic surface:
 - cabinet with a minimum size of 750 mm high and 2.4 metres wide
 - wall unit with shelves and a minimum size of 1.8 metres high and 1.2 metres wide
 - workstation with a 90-degree return
- utilise milling, boring and pocketing operations during the fabrication process of the above shopfitting components.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfitting regulations, codes and standards relevant to fabricating components on a CNC machine
- organisation's quality assurance requirements relating to fabricating components on a CNC machine
- sustainable shopfitting practices
- CNC machine manufacturer specification
- key features of working drawings and specifications
- workplace processes and procedures, and environmental requirements
- fabrication methods, types and uses of shopfitting components for:

- cabinets
- counters
- showcases
- wall units
- workstations
- characteristics, applications and limitations of materials used for shopfitting components:
 - acrylic
 - glass
 - laminates
 - manufactured board
 - solid timber
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - hazardous manual tasks
 - exposure to excessive noise
 - exposure to dust
 - electrical safety
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace
- processes and techniques for fabricating shopfitting unit components:
 - measuring relevant to dimensions and shapes
 - materials take-off
 - production scheduling
 - quality requirements and completion timeframes
- functional and operational features of tools and equipment, including battery operated tools
- CNC machine programming:
 - common conventions used in CNC
 - purpose of the zero point
 - axes of movement
 - data input to achieve job requirements
 - range of software applications
 - sequence of machine operations
 - correction of tool data to match selected tool
 - reasons for selecting tool paths:
 - tool cutter rotational direction and speed
 - lead in and lead out types

- testing and proving the CNC program
- procedures for editing and effects on finished products
- induction and safe operation of CNC equipment:
 - guarding and safe use of woodworking machinery
 - start-up and shutdown procedures
 - reduced speed dry run to check functions and alarms
 - faults and problems and actions to rectify
- types, functions and uses of CNC machinery.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfitting regulations, codes and Australian Standards
- current workplace procedures, workplace safety and environmental documentation
- shopfitting drawings and specifications, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to program equipment and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSH3002 Fabricate and assemble shopfront structures

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified numbering of Performance Criteria.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCSH3002 Fabricate and assemble shopfront structures.

Application

This unit of competency specifies the skills and knowledge required to set out, fabricate and assemble internal and external entries for shopping centres, commercial and industrial buildings. It includes off-site assembly of the structure to ensure correct fit and to allow for preparation for transport.

It applies to shopfitters who fabricate street fronts, bulk heads and entries that form a total shopfront structure for all applications.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative or certification requirements may apply to this unit of competency in some states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|-------------------------------------|---|
| 1 Undertake on-site measurements | 1.1 Identify, read and interpret work plans and specification to confirm job requirements. |
| | 1.2 Implement on-site work health and safety requirements. |
| | 1.3 Locate on-site datum, gridlines and reference points from site plan. |
| | 1.4 Use levelling techniques to check surrounding structures and surfaces for plumb, level, line and square. |
| | 1.5 Measure and record internal width and height dimensions. |
| | 1.6 Mark position of proposed frames and fittings on surrounding structure using non-permanent marker. |
| | 1.7 Note, rectify and report inconsistencies to appropriate person in dimensions, layout or location of structure outside the specified tolerances. |
| | 1.8 Notify glazier of site measurements for glass. |
| 2 Plan and prepare for the project. | 2.1 Inspect and identify offsite work area hazards and conditions and implement risk control measures. |
| | 2.2 Prepare detailed working drawings from design drawings to comply with job requirements. |
| | 2.3 Prepare an efficiency cutting plan and list and calculate materials for the project. |
| | 2.4 Determine job priorities and sequence job tasks in consultation with others in the workplace. |
| | 2.5 Select, fit and use personal protective equipment (PPE) required for the task. |
| | 2.6 Identify, obtain, safely handle, prepare and locate materials ready for use. |
| | 2.7 Set out components following workplace procedures. |

- 2.8 Select tools and equipment and check for serviceability.
- 2.9 Conduct a pre-start check and rectify and report faults.
- 3 Fabricate project components.
 - 3.1 Produce specified components using static machines in accordance with job and organisational quality requirements.
 - 3.2 Program CNC machine to manufacturer and produce specified components.
 - 3.3 Test CNC machine program operations in dry run simulation mode, and edit program and alarm settings as required, using the control station.
 - 3.4 Recognise minor faults and problems with CNC machine operation, and select and apply appropriate action to overcome issues and meet project schedules.
 - 3.5 Produce specified work pieces using CNC machine automatic mode.
 - 3.6 Cut straight and curved lines in small sections of glass.
 - 3.7 Check components for correct measurements and compliance with quality and job requirements.
- 4 Assemble components of shopfront structure.
 - 4.1 Select appropriate area to lay out and assemble material components.
 - 4.2 Use appropriate fixings and fasteners to assemble frame and check overall dimension for conformity with location and design.
 - 4.3 Check frame for parallel and square and adjust as required.
 - 4.4 Laminate required areas and fix fittings to components.
 - 4.5 Assemble shopfront free of scratches, dents, blemishes and damage.
- 5 Prepare for transport to
 - 5.1 Disassemble shopfront components that are too large for transport to worksite or too heavy for safe lifting, into

- worksite.
- smaller sections.
- 5.2 Identify and arrange packaging requirements for separate components and sections.
 - 5.3 Label and place components and sections in an appropriate workplace area in preparation for collection and transport to site.
 - 5.4 Number assembly diagram and locate for inclusion in delivery instructions.
- 6 Clean up.
- 6.1 Clean CNC and static machinery, tools and equipment, check for serviceability and report damage or faults.
 - 6.2 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 6.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSH3002 Fabricate and assemble shopfront structures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3002 Fabricate and assemble shopfront structures

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Rectified numbering of Performance Criteria.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCSH3002 Fabricate and assemble shopfront structures.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit of competency by fabricating and assembling a shopfront for one of the following as a minimum:

- shopping centre with a minimum size of 2.4 metres high and 3.0 metres wide
- commercial building with a minimum size of 2.4 metres high and 3.0 metres wide
- industrial building with a minimum size of 2.4 metres high and 3.0 metres wide.

The shopfronts must:

- include the entry, bulkheads and component fittings
- be constructed using aluminium, glass and timber
- comprise of one special finish.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfront regulations, codes and standards, in particular:
 - Australian Standard (AS) 1288 Glass in buildings
- organisation's quality assurance requirements relating to fabricating and assembling shopfront structures
- sustainable shopfitting practices
- key features of shopfront working drawings and specifications
- workplace processes and procedures and environmental requirements
- characteristics, applications and limitations of materials and components used in shopfront structures:

- aluminium
- glass
- timber
- special finishes
- glues/silicones/adhesives/tapes
- nuts/bolts/screws
- brackets
- closers/handles and stops
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - hierarchy of control
 - hazardous manual tasks
 - hazardous materials
 - exposure to excessive noise
 - exposure to dust
 - electrical safety
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace
- induction and safe operation of CNC equipment:
 - start-up and shutdown procedures
 - data input to achieve job requirements
 - reduced speed dry run to check functions and alarms
 - faults and problems and actions to rectify
 - types and uses of CNC machinery
 - range of software applications appropriate to CNC machinery
- processes and techniques for fabricating and assembling shopfront structures:
 - levelling techniques using laser and spirit levels
 - using measurements and formulas to calculate overall and internal sizes of components
 - measuring and squaring frames
- functional and operational features of power tools and equipment:
 - static machinery
 - air compressor and hoses
 - grinders
 - laser levels
 - drills
 - planers/routers/joiners
 - sanders

- battery operated tools.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfront legislation, codes and Australian Standards
- current workplace procedures, workplace safety and environmental documentation
- shopfront drawings and specifications, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to program equipment and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSH3003 Assemble and install shopfront structures

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCCSH3003 Assemble and install shopfront structures.

Application

This unit of competency specifies the skills and knowledge required to assemble and install internal and external prefabricated components, sections and fittings, which form the bulkheads and shopfront structure opening on to a street or shopping centre walkway. It includes assembling and installing shopfronts to new or existing premises.

It applies to shopfitters responsible for receiving, assembling and installing shopfronts.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative or certification requirements may apply to this unit of competency in some states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|----------------------|---|
| 1 Plan for the work. | 1.1 Read and interpret job requirements in conjunction with |
|----------------------|---|

- shopfitting plans and specifications.
- 1.2 Identify and apply organisational quality procedures and processes.
 - 1.3 Inspect onsite conditions and identify and report hazards and implement risk control measures.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others in the workplace.
 - 1.5 Select, fit and use personal protective equipment (PPE).
 - 1.6 Select tools, equipment and plant required for the job, check for serviceability, rectify and report faults.
 - 1.7 Receive delivered shopfront components, sections and fittings, check for completeness and report any shortages or damaged materials to appropriate person.
- 2 Prepare for installation.
- 2.1 Check datum, shopfront opening dimensions and levels against construction plan.
 - 2.2 Check and compare overall shopfront structure dimensions with installation specifications.
 - 2.3 Identify lease line and boundary from certified construction plans and confirm with building contractor or relevant person.
 - 2.4 Remove protrusions, and identify and rectify shopfront opening irregularities and dimensions, and check for plumb and level.
 - 2.5 Prepare suitable packing for level and plumb.
 - 2.6 Check location of services, prepared supports and bracing for shopfront structure installation.
- 3 Assemble and install shopfront structure.
- 3.1 Assemble components, fittings and pre-assembled frames and place into position in preparation for installation.
 - 3.2 Raise bulkhead into position using mechanical lifting equipment and support, and brace shopfront structure.
 - 3.3 Check and adjust shopfront structure for position, level,

- plumb and winding.
- 3.4 Anchor and secure shopfront structure using specified fixing methods.
 - 3.5 Fit doors, door furniture and closures and ensure that they operate freely.
 - 3.6 Scribe fillers and seal remaining gaps with approved sealant.
 - 3.7 Measure, compile and send glazing order to appropriate person.
- 4 Clean up.
- 4.1 Remove excess sealant and clean shopfront of marks, masking tape and protective layers.
 - 4.2 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSH3003 Assemble and install shopfront structures

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3003 Assemble and install shopfront structures

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCSH3003 Assemble and install shopfront structures.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by assembling and installing one shopfront structure, incorporating a bulkhead and an opening for a roller, pivot or concertina doors, with a minimum overall height of 3.0 metres and a minimum width of 3.6 metres.

In doing this, the candidate must:

- schedule shopfront work to accommodate client requirements and minimise disruption to the business operations
- maintain public safety during the use of mobile scaffold, elevated work platform, power tools and equipment.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfront regulations, codes and standards, in particular:
 - Australian Standard (AS) 2047 Windows and external glazed doors in buildings
 - AS 1288 Glass in buildings
- organisation's quality assurance requirements relating to the assembling and installing of shopfront structures
- sustainable shopfitting practices
- key features of working drawings and specifications
- workplace processes and procedures and environmental requirements
- characteristics, applications and limitations of materials used in shopfront structures:
 - acrylic
 - glass
 - aluminium
 - laminates
 - manufactured board

- solid timber
- workplace safety:
 - hierarchy of control
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - hazardous manual tasks
 - exposure to excessive noise
 - exposure to dust
 - electrical safety
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace
- processes and techniques for assembling and installing shopfront structures and fixings
- functional and operational features of hand and power tools and equipment:
 - air compressor and hoses
 - grinders
 - levelling equipment, including spirit levels
 - lifting plant
 - nail guns
 - planers
 - circular saws
 - jig saws
 - power drills
 - power leads
 - battery operated tools
 - hand saws, block plane.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfront regulations, codes and Australian Standards
- current workplace safety and environmental documentation
- shopfront drawings and specifications, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSHP3004 Assemble internal shopfitting units and prepare for transport

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCCSH3004 Assemble internal shopfitting units and prepare for transport.

Application

This unit of competency specifies the skills and knowledge required to assemble internal pre-cut components in an off-site manufacturing premises. It includes attaching fittings to the shopfitting units and preparing them for safe transport to the installation worksite.

It applies to shopfitters involved in the final production stages of assembling shopfitting units prior to installation on a commercial site.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

No licensing, legislative or certification requirements apply to this unit of competency at the time of publication.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to assemble internal shopfitting units.
 - 1.1 Identify, read and interpret job requirements from plans and specifications.
 - 1.2 Apply organisational quality procedures and processes for assembling shopfitting units.
 - 1.3 Determine job priorities and sequence job tasks in consultation with others in the workplace.
 - 1.4 Identify workplace hazards and conditions and implement risk control measures following work health and safety requirements.
 - 1.5 Select, fit and use personal protective equipment (PPE) required for the task.
 - 1.6 Select tools and equipment for the task, check for serviceability, rectify and report faults.
 - 1.7 Identify components for shopfitting units, safely handle and locate ready for assembling.

- 2 Assemble carcass.
 - 2.1 Assemble carcass with faces and edges flush, and secure joints with specified fixings.
 - 2.2 Square carcass, temporary brace and fix back, position and install shelves and mullions/divisions.
 - 2.3 Square and wind adjoining surfaces, close fit face panels flush with surfaces.
 - 2.4 Position and fix plinth or kicker to specified location.
 - 2.5 Prepare and secure external fixed panels to carcass using specified method and fixings.

- 3 Fit bench and assemble and fit drawers.
 - 3.1 Assemble bench or countertop components in preparation for installation.
 - 3.2 Position bench or countertop on carcass to specified dimensions and fix using specified fixings and fasteners.
 - 3.3 Edge drawer fronts, assemble drawers with bottoms fitted and fixed, and fit handles.
 - 3.4 Determine drawer runner type from job requirements and

- install to manufacturer specifications.
- 3.5 Apply specified clearances to install drawers parallel to carcass bottom.
- 4 Fit doors.
- 4.1 Edge doors and drill for and fix hinges and handles.
- 4.2 Hang doors to carcass with faces flush and allow specified clearances.
- 4.3 Sand surface edge finishes to job requirements and clean unit in preparation for coated finish.
- 5 Prepare units for transport.
- 5.1 Disassemble internal shopfitting units that are too large for transport or too heavy for safe lifting into smaller components and sections.
- 5.2 Determine and arrange packaging requirements for smaller and separate components.
- 5.3 Label disassembled components and sections, and place in a safe and appropriate area ready for collection.
- 5.4 Number and locate assembly diagram for inclusion in delivery instructions.
- 5.5 Safely store shopfitting units and components to avoid damage to surfaces.
- 6 Clean up.
- 6.1 Clean tools, equipment and machinery, check for serviceability and report damage or faults.
- 6.2 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
- 6.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSH3004 Assemble internal shopfitting units and prepare for transport.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3004 Assemble internal shopfitting units and prepare for transport

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCCSH3004 Assemble internal shopfitting units and prepare for transport.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by assembling and preparing for transport as outlined below:

- one point of sale counter with a minimum size of 2.4 metres in length
- one showcase with a minimum size of 2.0 metres height and 1.8 metres wide, including doors and glass
- one of the following, which must include a stone or acrylic surface:
 - cabinet with a minimum size of 750 mm high and 2.4 metres wide
 - wall unit with shelves and a minimum size of 1.8 metres high and 1.2 metres wide
 - workstation with a 90-degree return.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfitting regulations, codes and standards
- organisation's quality assurance requirements relating to the assembling of internal shopfitting units and preparation of units for transport
- sustainable shopfitting practices
- key features of working drawings and specifications
- workplace processes and procedures and environmental requirements
- shopfitting units:
 - cabinet
 - counter
 - showcase
 - wall unit
 - workstation
- characteristics, applications and limitations of materials used in shopfitting components:
 - acrylic

- glass
- laminates
- manufactured board
- solid timber
- adhesives, fixings and fasteners
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - hazardous manual tasks
 - exposure to excessive noise
 - exposure to dust
 - electrical safety
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace
- processes and techniques for assembling components for shopfitting units
- functional and operational features of tools and equipment:
 - battery operated tools
 - compressor
 - hand and power tools for assembly of units
 - measuring and marking tools
- fixings and fasteners used in assembling fitment:
 - benchtop connectors
 - brads
 - drawer runners
 - hinges
 - knockdown fittings
 - nails
 - screws
 - timber biscuits.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfitting legislation, codes and Australian Standards
- current workplace procedures, workplace safety and environmental documentation
- shopfitting drawings and specifications, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to program equipment and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSH3005 Apply and trim decorative additions to shopfittings and components

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCCSH3005 Apply and trim decorative additions to shopfittings and components.

Application

This unit of competency specifies the skills and knowledge required to apply and trim specifically designed decorative panelling, frames, borders and mirrors to shopfittings and components to ensure a quality finish. It includes offsite work on units being fabricated for installation and on-site installation of units and internal walls.

It applies to shopfitters who also work concurrently with clients and associated contractors to accommodate client requirements where the shop is operational.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

No licensing, legislative or certification requirements apply to this unit of competency at the time of publication.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to apply decorative additions.
 - 1.1 Identify, read and interpret decorative additions from job requirements, plans and specifications.
 - 1.2 Determine type of decorative addition to be applied and calculate material quantities using measurements and formulas.
 - 1.3 Identify worksite hazards and conditions and implement risk control measures following work health and safety and environmental requirements.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others in the workplace.
 - 1.5 Obtain materials, check for conformity and safely handle and locate materials ready for use.
 - 1.6 Establish appropriate method for fixing decorative additions to the substrate.
 - 1.7 Select, fit and use personal protective equipment (PPE) required for the task.
 - 1.8 Select tools and equipment for the task, check for serviceability, and rectify and report faults.
- 2 Fix and finish decorative additions.
 - 2.1 Set out position of decorative additions in accordance with plan and job description and confirm with client.
 - 2.2 Draw a plan to develop a true mitre for a compound angle and a mitre of different material widths and calculate angles by dissection.
 - 2.3 Set out, mark and cut to length decorative additions.
 - 2.4 Follow specifications to cut curved decorative additions work.
 - 2.5 Fit decorative additions and use established method to fix to substrate.
 - 2.6 Trim and finish decorative additions to meet organisational quality requirements.
- 3 Clean up.
 - 3.1 Clean tools and equipment, check for serviceability and report damage or faults.

- 3.2 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
- 3.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSH3005 Apply and trim decorative additions to shopfittings and components.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3005 Apply and trim decorative additions to shopfittings and components

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCCSH3005 Apply and trim decorative additions to shopfittings and components.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by applying and trimming:

- decorative timber panelling with a minimum of two square metres to a section of wall
- a minimum of two square metre extruded section border to a wall
- a timber or aluminium frame for a mirror that is at least 1200 mm x 600 mm.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfitting regulations, codes and standards
- organisation's quality assurance requirements relating to the application and trimming of decorative additions to shopfittings and components
- sustainable shopfitting practices
- content of and terms, symbols and conventions used in working drawings and specifications
- workplace processes and procedures and environmental requirements
- characteristics, applications and limitations of materials commonly used for decorative and ornamental additions to shop components:
 - decorative panelling
 - extruded sections and mouldings
 - mirrors
 - adhesives and double-sided tapes
 - fixings and fastenings
 - acrylic
 - glass
 - laminates
 - manufactured board

- workplace safety:
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - hazardous manual tasks
 - exposure to excessive noise
 - exposure to dust
 - electrical safety
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace
- processes and techniques for applying and trimming decorative additions:
 - efficient cutting strategies to minimise waste
 - geometry to develop a true raking mould shape or mitre
- functional and operational features of tools and equipment:
 - air compressor and hoses
 - nail guns
 - power drills
 - levelling equipment
 - battery operated tools
- solving problems, overcoming issues and meeting project schedules.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfitting legislation, codes and Australian Standards
- current workplace procedures, workplace safety and environmental documentation
- shopfitting drawings and specifications, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to program equipment and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSHP3006 Prepare shopfittings and surfaces and apply liquid finishes

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0 Supersedes and is not equivalent to CPCCSH3006 Prepare shopfittings and surfaces and apply liquid finishes.
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Application

This unit of competency specifies the skills and knowledge required to prepare new and previously coated shopfittings and surfaces, and to apply stains, lacquers, paint or sealer to create a specified finish. It includes scheduling work, which may be carried out off-site on units being fabricated for installation and other work completed on-site concurrently with other shopfitting work.

It applies to shopfitters who prepare metal, timber, timber product or concrete surfaces of shop doors, windows, walls, ceilings, partitions and other shopfittings, and apply a range of liquid finishes to these surfaces.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

No licensing, legislative or certification requirements apply to this unit of competency at the time of publication.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare to apply finishes.	<p>1.1 Read and interpret job description for preparing surfaces and applying finishes and confirm with relevant person.</p> <p>1.2 Identify surfaces to be covered, method of surface preparation, liquid finishes and application methods from job requirements.</p> <p>1.3 Select liquid finish, sealants and other surface preparation products and calculate material quantities.</p> <p>1.4 Obtain and follow manufacturer specifications and safety data sheet (SDS) for applying liquid finishes.</p> <p>1.5 Determine job priorities and sequence job tasks in consultation with others in the workplace.</p> <p>1.6 Inspect workplace conditions, identify and report hazards, and implement risk control measures.</p> <p>1.7 Select, fit and use personal protective equipment (PPE) required for the task.</p> <p>1.8 Select, tools and equipment for the job, check for serviceability and rectify and report faults.</p> <p>1.9 Obtain liquid finishes and preparation products, safely handle and locate ready for use.</p>
2 Prepare surfaces.	<p>2.1 Identify and determine condition of new and existing surfaces.</p> <p>2.2 Prepare new or uncoated surfaces and substrates following manufacturer specifications to meet job requirements.</p> <p>2.3 Remove unwanted coatings and loose debris from previously coated surfaces and prepare for specified finish.</p> <p>2.4 Repair surface defects and imperfections by stopping, filling and sanding smooth, ready for required finish.</p>
3 Apply stains and lacquers to surfaces.	<p>3.1 Apply stain evenly and consistently using specified application method and equipment.</p>

- 3.2 Check stained surfaces for consistent colour and dryness, and wipe to provide a clean surface for the application of lacquer.
 - 3.3 Apply consistent coverage of lacquer to surfaces using specified application method following manufacturer instructions.
- 4 Apply sealers and paint to surfaces.
 - 4.1 Apply sealer using specified application method and equipment to obtain an even coverage.
 - 4.2 Allow drying time for painted sealed surface and check for consistent coverage.
 - 4.3 Lightly sand and wipe surfaces to provide a clean surface for repeat paint applications.
- 5 Clean up.
 - 5.1 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Seal and store unused liquid finishes, sealers and paints following workplace procedures and manufacturer instructions.
 - 5.3 Clean application tools and equipment following environmental requirements.
 - 5.4 Maintain, store and secure tools and equipment, and rectify and report faults.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is not equivalent to CPCSH3006 Prepare shopfittings and surfaces and apply liquid finishes.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3006 Prepare shopfittings and surfaces and apply liquid finishes

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is not equivalent to CPCCSH3006 Prepare shopfittings and surfaces and apply liquid finishes.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing new and previously coated surfaces for staining and painting to meet product specifications by:

- staining and spraying a lacquer finish to a new timber surface with a minimum of two square metres
- priming and painting a metal or concrete surface
- preparing and painting a previously painted surface
- painting a surface using a roller and brush.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfitting regulations, codes and standards relevant to preparing and finishing surfaces
- relevant organisation's quality assurance requirements relating to the preparation and application of liquid finishes to shopfittings and surfaces
- sustainable shopfitting practices
- workplace processes and procedures and environmental requirements
- construction and shopfitting terminology relating to preparing and applying finishes to surfaces, including technical data for various surface finishes
- characteristics, applications and limitations of materials used for preparing and applying finishes to surfaces:
 - volatile organic compounds (VOC)
 - sealers
 - lacquers
 - paints
 - stains
- workplace safety:
 - job safety and environmental analysis (JSEA)

- safe work method statements (SWMSs)
- hierarchy of control
- safety data sheets (SDSs)
- hazardous manual tasks
- hazardous chemicals
- exposure to excessive noise
- exposure to dust
- electrical safety
- emergency procedures (evacuation, location and use of firefighting equipment, first aid)
- safety of public, visitors and others in the workplace
- processes and techniques for preparing and finishing surfaces:
 - surface preparation using grinding, manual and mechanical scraping and sanding, heat guns, washing down
 - cleaning previously coated surfaces of dust, grease, chalking, mould, smoke damage and blistering, flaking, peeling, cracking
 - horizontal and vertical application methods using brush, pad, roller, spray gun
- functional and operational features of tools and equipment:
 - spray equipment
 - heat removal equipment
 - mechanical sanders
 - spill kits
 - ventilation and extraction equipment
 - applicators and equipment
- solving problems, overcoming issues and meeting project schedules.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfitting regulations, codes and Australian Standards
- current workplace procedures, workplace safety and environmental documentation
- job requirements, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to source information and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSHP3007 Install prefabricated internal shopfitting units

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCCSH3007 Install prefabricated internal shopfitting units.

Application

This unit of competency specifies the skills and knowledge required to receive, position and install prefabricated shopfitting units. It includes assembling large units delivered to the worksite in sections.

It applies to shopfitters responsible for installing internal shopfitting units onsite concurrently with other shopfitting work that must be scheduled to accommodate client requirements, the shop when it is operational, and the requirements of other shopfitters and associated contractors.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative or certification requirements may apply to this unit of competency in some states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare to install prefabricated internal shopfitting units.
 - 1.1 Read and interpret plans and specifications to confirm job requirements.
 - 1.2 Interpret and apply organisational quality assurance requirements appropriate for the project.
 - 1.3 Receive and check delivered materials for completeness and conformity with job requirements and identify and report any damage.
 - 1.4 Unload delivered internal shopfitting units, place in safe area onsite ready for installation, and protect unit finishes from damage.
 - 1.5 Determine job priorities and sequence job tasks in consultation with others in the workplace.
 - 1.6 Inspect workplace conditions, identify and report hazards, and implement risk control measures.
 - 1.7 Select, fit and use personal protective equipment (PPE) required for the task.
 - 1.8 Select tools and equipment and check for serviceability.
 - 1.9 Conduct a pre-start check and rectify and report faults.

- 2 Check location of units and prepare for installation.
 - 2.1 Set out and mark position for installation, strike datum to check level, and plumb and confirm with original site measurements.
 - 2.2 Remove protrusions, install structural elements required to support the shopfitting unit and prepare position for unit installation.
 - 2.3 Level and plumb irregularities to meet job requirements and record any discrepancies.

- 3 Assemble and fix shopfitting unit.
 - 3.1 Assemble large unit components in a position for ease of installation.
 - 3.2 Check overall measurements of assembled unit against specification and address any anomalies.
 - 3.3 Prepare shopfitting units with drilled holes and check fixings are appropriate to connect to brickwork, timber,

- metal and stone surfaces.
- 3.4 Install assembled unit and pack level, plumb and square using appropriate levelling equipment and process.
 - 3.5 Anchor assembly at drilled connecting points, fit and align doors with specified parallel gaps.
 - 3.6 Scribe and fix beading and apply sealants to meet job requirements and specifications.
 - 3.7 Remove excessive sealant, protective covering and masking tape, and clean marks and markings from unit.
- 4 Clean up.
- 4.1 Clear work area, and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCSSH3007 Install prefabricated internal shopfitting units.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3007 Install prefabricated internal shopfitting units

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
- Supersedes and is equivalent to CPCCSH3007 Install prefabricated internal shopfitting units.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing four internal shopfitting units. One of these units must be assembled with smaller disassembled components to create a larger unit.

In doing this, the candidate must install:

- one point of sale counter with a minimum size of 2.4 metres in length
- one showcase fitted between walls, floor and ceiling, with a minimum size of 2.0 metres high and 1.8 metres wide, including doors and glass
- one of the following:
 - cabinet with a minimum size of 750 mm high and 2.4 metres wide
 - wall unit with shelves and a minimum size of 1.8 metres high and 1.2 metres wide
 - workstation with a 90-degree return.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfitting regulations, codes and standards
- organisation's quality assurance requirements relating to installation of units
- sustainable shopfitting practices
- content of and terms, symbols and conventions used in working drawings and specifications
- workplace processes and procedures and environmental requirements
- shopfitting units:
 - cabinet
 - counter
 - showcase
 - wall unit
 - workstation

- characteristics, applications and limitations of materials used in shopfitting components:
 - acrylic
 - glass
 - laminates
 - manufactured board
 - solid timber
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - hierarchy of control
 - safety data sheets (SDSs)
 - hazardous manual tasks
 - hazardous substances
 - exposure to excessive noise
 - exposure to dust
 - electrical safety
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace
- processes and techniques for installing shopfitting units:
 - measuring, levelling and plumbing openings
 - selecting and using various fixings and fastenings
- functional and operational features of tools and equipment:
 - levelling equipment
 - air compressor
 - power grinders
 - nail guns
 - power drills
 - battery operated tools
- solving problems, overcoming issues and meeting project schedules.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfitting regulations, codes and Australian Standards

- current workplace procedures, workplace safety and environmental documentation
- shopfitting drawings and specifications, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to communicate with others and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSH3008 Install internal shop walls and fixtures

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
	Supersedes and is equivalent to CPCCSH3008 Install internal shop walls and fixtures.

Application

This unit of competency specifies the skills and knowledge required to prepare, set out and install wall frames, partitions and wall linings to areas such as fitting or treatment rooms in internal shop areas. It includes fitting doors and windows, fixing mouldings and installing fixtures.

It applies to shopfitters engaged in creating new shops or renovating existing shops. The work is completed onsite concurrently with other shopfitting work that must be scheduled to accommodate client requirements, the shop when it is operational, and the requirements of other shopfitters and associated contractors.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

No licensing, legislative or certification requirements apply to this unit of competency at the time of publication.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
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- 1 Plan and prepare to install internal shop walls and fixtures.
 - 1.1 Read and interpret plans and specifications to confirm job requirements.
 - 1.2 Interpret and apply organisational quality assurance requirements appropriate for the project.
 - 1.3 Determine material type and calculate quantities to complete the task.
 - 1.4 Determine job priorities and sequence job tasks in consultation with others in the workplace to ensure timeframes are met.
 - 1.5 Inspect worksite conditions, identify hazards and implement risk control measures following work health and safety requirements and environmental practices.
 - 1.6 Select, fit and use personal protective equipment (PPE) for the task.
 - 1.7 Select tools and equipment for the task.
 - 1.8 Check for serviceability and rectify and report faults.
 - 1.9 Receive and check delivered materials for completeness and conformity with job requirements and identify and report any discrepancies or damage.
 - 1.10 Place materials in a safe and secure position ready for use.

- 2 Install internal wall framing and lining.
 - 2.1 Set out Internal wall framing parallel and square to existing structure.
 - 2.2 Set out frame with door and window openings, cut frame members and assemble ready to erect.
 - 2.3 Stand frame into position, level, square and plumb and use appropriate fixing method and fastenings appropriate for the existing structure.
 - 2.4 Mark and cut lining material to length, and shape and fix to frame to meet job requirements.

- 3 Install partitions.
 - 3.1 Set out and mark position of pre-assembled or onsite assembled partitions to plan dimensions.

- 3.2 Cut partition components accurately to size and locate connection points.
 - 3.3 Install and secure each component junction tight together and flush with face using specified fixings and fastenings.
 - 3.4 Secure, square and plumb assembled partitions within accepted industry tolerances.
- 4 Cut and fix decorative mouldings.
 - 4.1 Mark, cut to length, fit and fix specified mouldings.
 - 4.2 Fit and fix mitre joints flush to face and true.
 - 4.3 Mark and cut to length scribed joints.
 - 4.4 Set out, mark and fix specified fixtures.
- 5 Clean up.
 - 5.1 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 5.2 Clean tools and equipment, check for serviceability and report damage or faults.
 - 5.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSH3008 Install internal shop walls and fixtures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3008 Install internal shop walls and fixtures

Modification History

Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0 Supersedes and is equivalent to CPCCSH3008 Install internal shop walls and fixtures.
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Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- setting out, erecting and fixing a full height internal wall frame, which includes an internal and external corner and a door
- setting out, assembling and fixing partitions, which include one external and one internal corner and a T intersection.

In doing this, the candidate must:

- use timber or metal to construct the full height wall frame
- line wall with both decorative timber panelling and plasterboard
- set out, fit and fix the door jamb, fit and fix profiled architraves, hinge door and fit door furniture
- fit and fix profiled skirting with one external mitred and one internal scribed joint
- set out, assemble and fit a removable pelmet with two return ends.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfitting regulations, codes and standards relevant to internal shop walls and fixtures
- organisation's quality assurance requirements
- sustainable shopfitting practices
- content of and terms, symbols and conventions used in working drawings and specifications
- workplace processes and procedures and environmental requirements
- manufacturer specification for setting out, assembling and fixing selected partitions
- characteristics, applications and limitations of materials used in internal shop walls and fixtures:
 - fibre cement board
 - hardboard

- timber lining boards
- medium density fibreboard (MDF)
- particle board
- plasterboard
- plywood
- glass
- solid timber
- metal
- adhesives and gap fillers
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - hierarchy of control
 - safety data sheets (SDSs)
 - hazardous manual tasks
 - hazardous chemicals
 - exposure to excessive noise
 - exposure to dust
 - electrical safety
 - working safely at heights
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace
- processes and techniques for installing internal shop walls and fixtures:
 - cutting, assembling and fixing walls and partitions
 - lining walls using various products
 - using geometry to calculate irregular angles for cutting materials
 - mitring, scribing and fitting decorative mouldings and profiled timber
- construction terminology used in shopfitting
- types of fixings and fasteners used when installing internal shop walls and fixtures, and their application
- operational and functional features of tools and equipment:
 - air compressor
 - battery and gas-powered nail guns
 - drop saws
 - hand tools
 - laser, spirit and water levels
 - power drills
 - power planers
 - power saws

- routers and trimmers
- screw guns
- battery operated tools.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfitting regulations, codes and Australian Standards
- current workplace procedures, workplace safety and environmental documentation
- shopfitting drawings and specifications, job requirements, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to communicate with others and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSH3009 Demolish shopfronts and bulkheads

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Criteria numbering rectified and Modification History rectified.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
Supersedes and is equivalent to CPCCSH3009 Demolish shopfronts and bulkheads.

Application

This unit of competency specifies the skills and knowledge required to demolish sections of existing shop buildings and to dispose of demolished materials and waste. It includes completing the required demolition work to schedule and following specific plans and specifications.

It applies to shopfitters who demolish old shop building components to make alterations, extensions and additions to the shop. Work may be completed onsite concurrently with other shopfitting work that must be scheduled to accommodate client requirements, the shop when it is operational, and the requirements of other shopfitters and associated contractors.

This demolition work is limited to non-load-bearing shop building structures, including:

- external walls and cladding
- suspended ceiling structures
- shopfronts and glazed sections
- joinery and fixtures
- high level bulkheads.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative or certification requirements may apply to this unit of competency in some states and territories. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------------------|---|
| 1 Plan shop demolition work. | 1.1 Identify, read and interpret shopfront demolition details from plans and specifications, and confirm against job requirements. |
| | 1.2 Interpret and apply organisational quality assurance requirements appropriate for scope of work. |
| | 1.3 Determine designated demolition area of shopfront and bulkhead, identify hazards and assess risks. |
| | 1.4 Establish, and confirm with team members, risk management and hazard control measures and manage the status of existing services. |
| | 1.5 Apply and document health, safety and environmental requirements for the worksite and for individual demolition tasks. |
| | 1.6 Sequence and schedule demolition tasks in consultation with team members, others onsite and client, to ensure work is completed within given timeframe. |
| | 1.7 Select, fit and use personal protective equipment (PPE) required for the task. |
| | 1.8 Select plant, tools and equipment suited to the demolition work, check for serviceability, and rectify and report faults. |
| | 1.9 Arrange and organise scaffolding and lifting equipment to meet job requirements. |
| | 1.10 Plan the handling, removal and disposal of identified demolition materials to meet work health and safety (WHS) and environmental requirements. |

- 2 Prepare demolition worksite.
 - 2.1 Erect hoardings, barricades and signage as specified in work instructions.
 - 2.2 Erect and check scaffolding, fall protection and props to ensure they are installed against demolition plan.
 - 2.3 Set out and mark building components to be demolished and removed.
 - 2.4 Check site preparation and safety meet workplace safety and environmental requirements before starting work.
 - 2.5 Cover and protect existing structure, furniture and equipment from dust and damage.
 - 2.6 Identify, isolate or disconnect services for safety and to avoid damage.

- 3 Apply demolition procedures.
 - 3.1 Assess individual tasks immediately before demolition work to identify potential hazards, and review and amend safety procedures in consultation with relevant personnel.
 - 3.2 Install propping required to prevent collapse of overhead non-load-bearing elements.
 - 3.3 Follow demolition procedures for safely dismantling and demolishing building structure.
 - 3.4 Handle and remove demolished materials using appropriate handling techniques from location to designated storage area or skip bin.
 - 3.5 Handle, store and stack demolished materials and components identified for salvage ready for reuse or transport.
 - 3.6 Maintain effective verbal and non-verbal communication, including the use of mobile technology, with team members and others onsite to monitor and manage demolition procedures.

- 4 Clean up.
 - 4.1 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean and maintain tools and equipment and rectify and report faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSH3009 Demolish shopfronts and bulkheads.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3009 Demolish shopfronts and bulkheads

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Criteria numbering rectified and Modification History rectified.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0
Supersedes and is equivalent to CPCSH3009 Demolish shopfronts and bulkheads.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by dismantling and demolishing a shopfront and internal cabinet.

In doing this, the candidate must:

- dismantle and demolish a shopfront of a minimum of 3.6 metres high and 3.6 metres wide, including a bulkhead, glazing, door closure and joinery
- dismantle one internal cabinet or fixture of a minimum of 3.6 metres high and 2.4 metres wide, which is attached to the building structure
- protect surrounding structure, floor covering, existing furniture and fixtures from damage
- plan and schedule the demolition work to maintain continuity of business operations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfitting regulations, codes and standards relating to shopfront and bulkhead demolition
- organisation's quality assurance requirements relating to demolition of shopfronts and bulkheads
- sustainable shopfitting practices
- construction and demolition terminology used in shopfitting
- content of and terms, symbols and conventions used in working drawings and specifications
- characteristics, applications and limitations of materials used in shopfitting components:
 - acrylic
 - glass
 - laminates

- manufactured board
- solid timber
- procedures and techniques relevant to demolishing shopfronts:
 - calculating volumes of material for removal
 - non-load-bearing external walls
 - suspended ceilings
 - shopfronts and glazed sections
 - joinery and fixtures
 - high-level bulkheads
 - maintaining operation of existing services
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - hierarchy of control
 - how to identify potential hazards
 - safety data sheets (SDSs)
 - hazardous manual tasks
 - exposure to excessive noise
 - removal of asbestos
 - exposure to dust
 - hazardous substances:
 - lead
 - fibreglass
 - working at heights
 - falling objects
 - vibration
 - electrical safety
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace
- functional and operational features of tools and equipment:
 - air compressors and pneumatic tools
 - angle grinders
 - elevated work platforms (EWPs)
 - scaffolding
 - power saws
 - power drills.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfitting regulations, codes and Australian Standards
- current workplace procedures, workplace safety and environmental documentation relating to demolition
- shopfitting drawings and specifications, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to communicate with others and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSH3010 Prepare shop floors for new coverings

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0

Supersedes and is equivalent to CPCCSH3010 Prepare shop floors for new coverings.

Application

This unit of competency specifies the skills and knowledge required to remove existing shop floor coverings and prepare and apply primer and cementitious products to patch and smooth shop floors ready for the installation of new selected floor coverings.

It applies to those who work in new or existing retail environments where shopfitters need to prepare concrete or timber floors using smoothing and skim coating techniques.

The unit supports shop floor preparation work which is completed onsite and may be undertaken concurrently with other shopfitting work. Where the shop is operational, work is scheduled to accommodate client requirements and coordinate with other shopfitters and associated contractors.

Individuals at this level take responsibility for organising and completing these tasks with a high degree of self-direction.

No licensing, legislative or certification requirements apply to this unit of competency at the time of publication.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

Nil.

Unit Sector

Shopfitting

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Plan and prepare shop floors. | 1.1 Identify, read and interpret shop floor preparation and coverings from plans and specifications and confirm against job requirements. |
| | 1.2 Interpret and apply organisational quality assurance requirements appropriate for scope of work. |
| | 1.3 Calculate materials required to prepare shop floors for new coverings. |
| | 1.4 Determine job priorities and sequence job tasks in consultation with others in the workplace to ensure work is completed within given timeframes. |
| | 1.5 Inspect workplace conditions, identify hazards and apply risk control measures to meet work health and safety and environmental requirements. |
| | 1.6 Select, fit and use personal protective equipment (PPE) for the task. |
| | 1.7 Select plant, tools and equipment suited to shop floor preparation work. |
| | 1.8 Check for serviceability and rectify and report faults. |
| 2 Remove existing shop floor coverings. | 2.1 Select starting point to ensure entry and exit access is available during removal process. |
| | 2.2 Lift sections of floor coverings following job specifications and stack existing removed and rolled floor coverings in preparation for removal. |
| | 2.3 Remove and dispose of existing floor coverings using safe manual handling techniques. |
| | 2.4 Clear remnants of floor coverings or fixings from exposed sub-floor surface. |
| 3 Apply floor surface covering. | 3.1 Clean sub-floor surfaces following manufacturer recommendations. |

- 3.2 Apply trial applications of primer and smoothing compound to the sub-floor.
 - 3.3 Confirm suitability and compatibility of primer, smoothing and levelling compounds, and review and retrial until job requirements are met.
 - 3.4 Apply surface covering to required floor area ensuring specified depth and coverage is achieved.
 - 3.5 Check surfaces for contamination, moisture content and suitability of finish, and complete rectification to meet job requirements.
 - 3.6 Seal and store unused products following workplace and environmental requirements.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials following workplace and environmental requirements.
 - 4.2 Clean and maintain tools and equipment, and rectify and report faults.
 - 4.3 Store and secure tools and equipment following workplace procedures.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCSH3010 Prepare shop floors for new coverings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSH3010 Prepare shop floors for new coverings

Modification History

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Minor edits to formatting.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0

Supersedes and is equivalent to CPCSH3010 Prepare shop floors for new coverings.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by removing four different types of shop floor coverings and preparing the existing surface for a new covering. Each area must be a minimum of 10 square metres.

In doing this, the candidate must:

- remove three of the following surfaces once:
 - carpet tiles
 - vinyl tiles
 - resilient tiles
 - adhesive bonded carpet
 - parquetry with hard underlay
 - floating engineered floor
- clear and clean the exposed surface
- mix and test compounds for suitability and compatibility
- apply primers, and cementitious and levelling compounds to patch and smooth the existing surface.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- shopfitting regulations, codes and standards, in particular:
 - Australian Standard (AS) 2455.1 Textile floor coverings – Installation practice General
 - AS 1884 Floor coverings – Resilient sheet and tiles – Installation practices

- organisation's quality assurance requirements relating to shop floor preparation
- sustainable shopfitting practices
- procedures and techniques for removing existing floor coverings and preparing shop floors for new covering:
 - types and methods of fixing various floor coverings
 - identifying and resolving relevant problems relating to floor preparation
- environmental protection requirements relevant to preparing shop floors for new coverings
- functional and operational features of tools and equipment:
 - vacuum cleaners
 - vinyl tile lifter
 - mixing drills
 - hand and power tools
 - battery operated tools
- characteristics, applications and limitations of materials and products used for floor preparation:
 - smoothing compounds
 - levelling compounds
 - bulk fillers
 - repair/patching compounds
 - binding agents
 - mineral compounds
- workplace safety:
 - job safety and environmental analysis (JSEA)
 - safe work method statements (SWMSs)
 - hierarchy of control
 - safety data sheets (SDSs)
 - hazardous manual tasks
 - exposure to excessive noise
 - removal of asbestos
 - exposure to dust
 - hazardous chemicals and substances
 - electrical safety
 - emergency procedures (evacuation, location and use of firefighting equipment, first aid)
 - safety of public, visitors and others in the workplace.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- relevant shopfitting regulations, codes and Australian Standards
- current workplace procedures, workplace safety and environmental documentation relating to shop floor preparation
- shopfitting drawings and specifications, organisational policies, procedures and equipment to undertake the performance criteria and assessment requirements
- digital technology, devices and software to communicate with others and to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4001 Investigate and prepare swimming pool site

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit. It includes some content from CPCCBC4049A Apply structural principles to construction of swimming pools and spas, which has been deleted.

Application

This unit specifies the skills and knowledge required to prepare a site for swimming pool construction. It includes investigating the site to confirm site levels and pool height and supervising the excavation.

This unit applies to a range of contexts and reflects the role of those who are responsible for preparing sites for the installation or construction of:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Evaluate site conditions.
 - 1.1 Read and interpret relevant site and swimming pool construction information from plans, specifications, codes and standards.
 - 1.2 Interpret and apply work health and safety and environmental requirements.
 - 1.3 Evaluate site access, delivery service requirements and space for storage of materials.
 - 1.4 Apply relevant WHS regulations and codes when locating and preparing for work near existing underground and overhead services.
 - 1.5 Assess and resolve site issues that may impact pool construction.
 - 1.6 Calculate amount of excavation spoil and plan the removal.

- 2 Prepare site for pool excavation.
 - 2.1 Prepare procedures for onsite and public safety during project work.
 - 2.2 Design site access and egress and arrange temporary site fencing.
 - 2.3 Set out pool position, finish height of pool and depth of excavation from Australian Height Datum (AHD).
 - 2.4 Organise plant, machinery and equipment for the excavation process.

- 3 Coordinate and manage excavation.
 - 3.1 Check local government and certifier approval and detail drawings to confirm structural requirements.
 - 3.2 Oversee the excavation process ensuring adherence to plan specifications and safety requirements.
 - 3.3 Examine soil stability and take necessary steps to avoid soil collapse.
 - 3.4 Verify soil compaction complies with soil test report, standards and codes.

- | | | |
|---------------------------------------|-----|---|
| 4 Prepare site for pool construction. | 4.1 | Oversee the removal of excess soil and cleaning of public areas. |
| | 4.2 | Prepare site for delivery of swimming pool construction materials. |
| | 4.3 | Complete necessary documentation and notify relevant person of next stage of pool construction. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria:

- reading skills to interpret soil test reports
- oral communication skills to interact with clients from diverse backgrounds
- numeracy skills to use measurements and apply formulas to calculate levels
- technology skills to use digital measuring devices.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4001 Investigate and prepare swimming pool site

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit. It includes some content from CPCCBC4049A Apply structural principles to construction of swimming pools and spas, which has been deleted.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by preparing two sites for pool construction, one level site and one with sloping/uneven ground.

In doing this, the candidate must:

- determine site contours, datum mark and finished height of pool from project plans
- control risks relating to excavation work.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards and codes relevant to excavation for of swimming pools
- relevant sections of the National Construction Code (NCC)
- excavation work code of practice
- Guide for working in the vicinity of overhead and underground electric lines
- features of project plans and specifications
- processes, procedures and techniques for:
 - levelling using a water level and laser level
 - pool excavation
 - installing ancillary pipework
- operational and functional features of plant, tools and equipment
- workplace procedures and workplace safety:
 - hierarchy of control
 - hazardous manual tasks
 - competency requirements for operating pumping equipment
 - temporary safety barriers and fences around swimming pool construction sites
- workplace and environmental requirements relating to waste disposal and clean up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to preparation and excavation of sites for swimming pools
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4002 Select, procure and store construction materials for swimming pool and spa projects

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCBC4050A Select, procure and store construction materials for swimming pools and spa projects. Recoded and updated to meet the Standards for Training Packages.

Application

This unit specifies the skills and knowledge required to supervise the systems by which construction materials are selected, acquired and stored on site for swimming pool and spa projects. It includes identifying non-compliant materials to ensure the delivered construction materials meet the requirements of the National Construction Code (NCC) and contract and service specifications.

This reflects the role of builders, managers and related construction industry professionals responsible for applying quality standards to the procurement and onsite storage of materials for the construction of swimming pools in a range of contexts:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Evaluate suitability of swimming pool and spa building materials.	1.1 Obtain and ensure currency of relevant project plans, specifications, codes and construction requirements.
	1.2 Identify materials specified in project plans and specifications and assess their compliance and suitability for the project and the region.
	1.3 Establish environmental impacts of different materials.
	1.4 Confirm material installation and assembly tolerances to meet requirements of relevant construction industry standards and codes.
2 Select and procure materials.	2.1 Choose materials for their compliance with structural requirements, durability, sustainability, safety and cost effectiveness.
	2.2 Consider short- and long-term degradation of materials in relation to the project's proposed life cycle.
	2.3 Evaluate and select alternative materials if specified materials are unavailable.
	2.4 Finalise selection of materials for use in accordance with contractual requirements and in consultation with relevant professionals and the client.
	2.5 Procure and order materials following workplace purchasing procedures.
3 Supervise onsite delivery and storage of materials.	3.1 Determine limitations and effects of transportation on materials and components and investigate potentially damaging circumstances.
	3.2 Instruct relevant persons of workplace safety requirements when handling and storing delivered

materials.

- 3.3 Implement procedures for inspecting all materials delivered onsite for quantity, quality, defects and damage.
- 3.4 Inform relevant persons of actions required to deal with quality inconsistencies of delivered building materials.
- 3.5 Supervise and allocate safe storage space, security and protection of materials to meet manufacturer specifications and site safety requirements.
- 3.6 Maintain records of delivery, variations, damage and inferior materials.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria:

- reading skills to interpret information on materials and to evaluate their suitability for the job
- oral communication skills to use questioning and active listening when clarifying procurement requirements
- numeracy skills to calculate material quantities
- technology skills to use devices to record and track orders and deliveries.

Unit Mapping Information

Supersedes and is equivalent to CPCBC4050A Select, procure and store construction materials for swimming pools and spa projects.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4002 Select, procure and store construction materials for swimming pool and spa projects

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor edits to formatting.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCBC4050A Select, procure and store construction materials for swimming pools and spa projects. Recoded and updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by selecting, procuring and organising the delivery and safe onsite storage for projects covering two of the following:

- one swimming pool
- one spa
- one swimming pool and spa.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards and codes relevant to concrete swimming pools and spas
- relevant sections of the National Construction Code (NCC)
- features of swimming pool and spa project plans and specifications
- pool fencing requirements
- properties, applications and limitations of swimming pool and spa materials, products and components
- workplace quality assurance systems
- processes, procedures and techniques for:
 - building swimming pools and spas
 - calculating concrete quantities
 - using digital devices to track, monitor and control concrete delivery
 - applying ‘shotcrete’
 - applying internal finishes to concrete swimming pools and spas

- type, nature and performance of concrete:
 - properties and uses of cement
 - principles of reinforced concrete using steel, wire, fibres
 - effects of impurities in concrete
 - causes of surface defects during concrete placement
 - compaction of concrete
 - detrimental effects on concrete of poor or no curing
- types of curing methods:
 - accelerated curing
 - continuously wetting concrete
 - impermeable membrane curing
- finishing processes and surface treatments for swimming pool and spa shell
- operational and functional features of tools and equipment
- relevant sections of work health and safety regulations
- workplace procedures and workplace safety:
 - hierarchy of control
 - hazardous manual tasks
 - hazardous chemicals
 - falls from heights
 - temporary safety barriers and fences around pools
 - competency requirements for operating pumping equipment
- workplace and environmental requirements relating to waste disposal and clean-up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to swimming pools and spas
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace policies and procedures for procuring and storing construction materials
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4003 Install swimming pool and spa subsoil drainage

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to install subsoil drainage to variously shaped in-ground swimming pools and spas. It includes preparing and installing the drainage during excavation.

This reflects the role of those who are responsible for diverting subsoil water away from the swimming pool and spa construction site. It applies to a range of contexts:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan the sub-soil	1.1 Access, read and interpret relevant information from
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- drainage. plans, specifications, codes and standards.
- 1.2 Interpret and apply work health and safety and environmental requirements.
 - 1.3 Locate existing underground services and avoid during excavation and construction works.
 - 1.4 Identify type, dimensions and area of subsoil drainage.
 - 1.5 Calculate and order materials.
 - 1.6 Determine commencement date and schedule delivery of material, components and required plant and equipment.
 - 1.7 Determine job priorities and sequence job tasks in consultation with others on site.
- 2 Prepare for and install subsoil drainage.
- 2.1 Set out position and depth of drainage.
 - 2.2 Select, fit and use personal protective equipment appropriate for the activity.
 - 2.3 Conduct a pre-operation check of plant and equipment.
 - 2.4 Excavate trench depth and width to set out position.
 - 2.5 Install and compact specified drainage material to determined levels.
 - 2.6 Install drainage pipework and backfill trenches.
- 3 Clean up site.
- 3.1 Clear the work area and reuse, recycle or dispose of materials in accordance with workplace and environmental requirements.
 - 3.2 Clean tools and equipment, check for serviceability, report any damage or faults and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4003 Install swimming pool and spa subsoil drainage

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing subsoil drainage for two different swimming pool construction projects.

In doing this, the candidate must lay drainage and components to set heights, levels and falls.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards and codes relevant to drainage and construction of swimming pools and spas
- relevant sections of the National Construction Code (NCC)
- features of swimming pool and spa project plans and specifications
- properties, applications and limitations of subsoil drainage materials, products and components:
 - perforated pipes and jointing materials
 - geo-textile fabric
 - granular materials
- processes, procedures and techniques for:
 - subsoil drainage excavation
 - installing various types of drainage materials and products
- effects of excessive water on soil and swimming pools
- operational and functional features of tools and equipment
- workplace procedures and workplace safety:
 - hierarchy of control
 - hazardous manual tasks
 - competency requirements for operating excavation equipment
 - temporary safety barriers and fences around pools
- workplace and environmental requirements relating to waste disposal and clean up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to swimming pool subsoil drainage
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4004 Install swimming pool and spa circulation systems and components

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to install pipework to swimming pool and spa circulation systems and components. It includes installing and connecting pool pipework to pumps, filtration and heating systems.

This unit applies to a range of contexts and reflects the role of those who are responsible for the installation process of pipework to above-ground and in-ground:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan and prepare for the installation of circulation systems and components.
 - 1.1 Access, read and interpret relevant information from plans, specifications, codes and standards.
 - 1.2 Interpret and apply work health and safety and environmental requirements.
 - 1.3 Obtain information to identify, locate and protect existing underground services prior to excavation.
 - 1.4 Calculate and order pipework, components and materials.
 - 1.5 Determine commencement date and schedule delivery of pipework, components and materials.
 - 1.6 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.7 Select and check tools and equipment for serviceability.
 - 1.8 Select, fit and use personal protective equipment appropriate for the activity.

- 2 Install pipework for swimming pools and spas.
 - 2.1 Confirm position of circulation equipment with relevant person.
 - 2.2 Excavate trenches for pipework to specified depth and level.
 - 2.3 Install pipework and components to specified fall.
 - 2.4 Test pipework for leaks and repair as necessary.
 - 2.5 Backfill and compact trenches to comply with relevant Australian Standards.

- 3 Clean up site.
 - 3.1 Clear the work area and reuse, recycle or dispose of materials in accordance with workplace and environmental requirements.
 - 3.2 Clean tools and equipment, check for serviceability, report any damage or faults and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4004 Install swimming pool and spa circulation systems and components

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing pipework and components for a circulation system covering one of the following:

- one swimming pool
- one spa
- one swimming pool and spa.

Installation must include a pool pump and a filtration system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards and codes relevant to installation of circulation systems for swimming pools and spas
- relevant sections of the National Construction Code (NCC)
- features of swimming pool and spa project plans and specifications
- manufacturer instructions for circulation systems and components
- properties, applications and limitations of swimming pool and spa materials, products and components for circulation systems
- processes, procedures and techniques for:
 - construction of in-ground pools and spas
 - installation of above-ground pools and spas
 - installation and operation of swimming pool and spa circulation equipment
 - connecting filtration, circulation, heating and lighting systems
- licensing and competency requirements for installing swimming pool and spa ancillary equipment
- operational and functional features of tools and equipment
- relevant sections of workplace safety requirements
- workplace safety:
 - hierarchy of control

- hazardous manual tasks
- falls from heights
- temporary safety barriers and fences around pools
- workplace and environmental requirements relating to waste disposal and clean-up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to swimming pools and spas
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4005 Install prefabricated fibreglass swimming pools

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to install variously shaped in-ground prefabricated fibreglass swimming pools. It includes preparing for filtration and circulation systems and luminary bonding for equipment and lighting.

This unit applies to a range of contexts and reflects the role of those who are responsible for the installation process and the management of excavation and heavy lifting equipment to complete the installation of prefabricated fibreglass:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan installation of prefabricated fibreglass swimming pool.
 - 1.1 Access, read and interpret relevant information from plans, specifications, codes and standards.
 - 1.2 Interpret and apply work health and safety and environmental requirements.
 - 1.3 Identify and confirm with client type and location of filtration and circulation system and lighting requirements.
 - 1.4 Calculate and order materials and components.
 - 1.5 Determine commencement date and schedule delivery of material and components and required plant and equipment.
 - 1.6 Apply relevant WHS regulations and codes when locating and preparing for
 - 1.7 Determine job priorities and sequence job tasks in consultation with others on site.
 - 1.8 Select, fit and use personal protective equipment appropriate to activity.
- 2 Install prefabricated fibreglass swimming pool.
 - 2.1 Set out and mark pool position, finish height and excavation depth.
 - 2.2 Excavate to set out depth and side clearance, allowing for backfill.
 - 2.3 Select and prepare base in accordance with soil classifications of site.
 - 2.4 Confirm installation of circulation pipework to shell of swimming.
 - 2.5 Confirm and implement requirements for managing traffic during pool installation.
 - 2.6 Communicate with crane service provider to lift, position and set shell to the specified level.
- 3 Clean up site.
 - 3.1 Clear the work area and reuse, recycle or dispose of materials in accordance with workplace and environmental requirements.

- 3.2 Clean tools and equipment, check for serviceability, report any damage or faults and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4005 Install prefabricated fibreglass swimming pools

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing one in-ground prefabricated fibreglass swimming pool.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards, codes and permits relevant to installation of prefabricated fibreglass swimming pools
- relevant sections of the National Construction Code (NCC)
- features of swimming pool project plans and specifications
- properties, applications and limitations of swimming pool materials, products and components
- processes and procedures for:
 - pool excavation
 - types of base preparations – screed and compact base, concrete slab
 - lifting, setting and levelling prefabricated fibreglass pools
 - connecting filtration and circulation systems
- licensing and competency requirements for installing swimming pool ancillary equipment
- operational and functional features of tools and equipment
- workplace safety:
 - hierarchy of control
 - temporary safety barriers and fences around pools
 - hazardous manual tasks
 - competency requirements for operating pumping equipment
- types, advantages and environmental efficiencies of swimming pool covers
- workplace and environmental requirements relating to waste disposal and clean up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to prefabricated fibreglass swimming pools
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4006 Apply sprayed concrete to shape and finish swimming pools and spas

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to apply the process of spraying concrete to variously shaped in-ground swimming pool and spa shells using high pressure equipment. It includes knowledge of structural principles and properties and the performance of concrete.

This unit reflects the role of those who are responsible for the process of applying, shaping and finishing pool and spa shells. It applies in a range of contexts:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|---|
| 1 Plan to spray concrete for swimming pool and spa shells. | 1.1 Access, read and interpret relevant concrete swimming pools and spas information from plans, specifications, codes and standards. |
| | 1.2 Interpret and apply work health and safety and environmental requirements relating to concrete spraying of swimming pool and spa shells. |
| | 1.3 Identify shape and finish of sprayed concrete and confirm with relevant person. |
| | 1.4 Determine concrete properties from specifications and calculate quantity. |
| | 1.5 Determine job priorities and sequence job tasks in consultation with others on site. |
| | 1.6 Schedule delivery of concrete and required plant and equipment in consultation with equipment operators. |
| 2 Determine compliance with structural principles. | 2.1 Establish swimming pool and spa reinforcing design meets the structural principle requirements for the shape, size and capacity of the swimming pool and spa. |
| | 2.2 Inspect reinforcement and components and check they are fixed as specified in structural plans and comply with standards and codes. |
| 3 Prepare for concreting work. | 3.1 Test delivered concrete for swimming pool and spa shell meets the stated specifications, standards and codes. |
| | 3.2 Conduct a pre-operation check on plant and equipment. |
| | 3.3 Check luminaires bonding, other cabling services, filtration and recirculation plumbing are correctly installed. |
| | 3.4 Confirm accuracy, stability and strength of formwork as required. |
| | 3.5 Mask and protect ancillary installations from concrete |

overspray.

- | | | |
|---|-----|--|
| 4 Supervise spray and finish process to concrete shell. | 4.1 | Select, fit and use personal protective equipment appropriate for activity. |
| | 4.2 | Establish starting point for application of concrete. |
| | 4.3 | Direct the application of concrete to specified thickness and reinforcement coverage. |
| | 4.4 | Control the spraying and shaping of pool shell contours, stairs and landing. |
| | 4.5 | Observe and direct the even finish of walls, base, coving and stairs to specified dimensions and falls. |
| | 4.6 | Check cleanliness and operation of recirculation system. |
| 5 Clean up site. | 5.1 | Clear the work area and reuse, recycle or dispose of materials following workplace and environmental requirements. |
| | 5.2 | Clean tools and equipment, check for serviceability, report any damage or faults and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4006 Apply sprayed concrete to shape and finish swimming pools and spas

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Correction to Knowledge Evidence.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by applying the operations of spraying and finishing for one of the following:

- one swimming pool
- one spa.

In doing this, the candidate must:

- evaluate the properties and performance of concrete and impacts on concrete integrity, and analyse the ability of concrete shell to withstand imposed forces and pressures
- ensure consistent concrete thickness and coverage on steel reinforcing as specified
- direct the shaping of concrete pool shell and finishing to obtain an even and defect-free surface in preparation for interior finish
- apply specified concrete curing methods.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards and codes relevant to concrete swimming pools and spas
- relevant sections of the National Construction Code (NCC)
- features of swimming pool and spa project plans and specifications
- pool fencing requirements
- properties, applications and limitations of swimming pool and spa materials, products and components
- workplace quality assurance systems
- processes, procedures and techniques for:
 - building swimming pools and spas

- calculating concrete quantities
- using digital devices to track, monitor and control concrete delivery
- applying 'shotcrete'
- applying internal finishes to concrete swimming pools and spas
- type, nature and performance of concrete:
 - properties and uses of cement
 - principles of reinforced concrete using steel, wire, fibres
 - effects of impurities in concrete
 - detrimental effects on concrete of poor or no curing
 - types of curing methods:
 - accelerated curing
 - continuously wetting concrete
 - impermeable membrane curing
- records include details of:
 - causes of surface defects during concrete placement
 - compaction of concrete
 - finishing processes and surface treatments for swimming pool and spa shell
- operational and functional features of tools and equipment
- relevant sections of work health and safety regulations
- workplace procedures and workplace safety:
 - hierarchy of control
 - hazardous manual tasks
 - hazardous chemicals
 - falls from heights
 - temporary safety barriers and fences around pools
 - competency requirements for operating pumping equipment
- workplace and environmental requirements relating to waste disposal and clean-up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to concrete swimming pools and spas
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace safety and environmental requirements
- a swimming pool and spa construction site.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4007 Commission ancillary swimming pool and spa systems and hand over to client

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to commission ancillary swimming pool and spa systems. It includes the testing of filtration, heating and lighting systems.

This unit reflects the role of those who are responsible for commissioning ancillary pool systems and finalising hand over to clients. It applies to a range of contexts:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Collate project and 1.1 Review client information to ensure client requirements

client information.		have been met.
	1.2	Review contractual conditions to determine final payment.
	1.3	Compile client information and instructions for operation of swimming pool and spa equipment and systems.
	1.4	Contact client and arrange suitable time to meet for handover.
2 Connect and test ancillary equipment.	2.1	Test operation of filtration, heating, lighting and cleaning control systems.
	2.2	Conduct adjustment in line with pool environment, conditions and operating specifications.
	2.3	Set equipment timers to accommodate pool environment and conditions.
	2.4	Inspect workmanship and ensure all inclusions are supplied and fitted.
	2.5	Record outcomes and complete necessary documentation.
3 Conduct client handover.	3.1	Confirm project completion and supply of inclusions with client.
	3.2	Demonstrate operation and inform client of settings, adjustments and routine maintenance requirements.
	3.3	Supply owner with swimming pool and spa equipment guarantees, warranties and manufacturer operating instructions.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria:

- oral communication skills to instruct client on operation of ancillary pool systems
- technology skills to set digital control systems.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4007 Commission ancillary swimming pool and spa systems and hand over to client

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- commissioning ancillary and control systems for one of the following:
 - one swimming pool
 - one spa
 - one swimming pool and spa
- carrying out handover to client.

The commissioning must include a:

- circulation system
- dosing system
- filtration system
- cleaning system.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, codes and standards relevant to swimming pools and spas
- pool fencing requirements
- pool cover requirements
- operational and functional features of ancillary pool systems
 - heating
 - filtration
 - lighting
 - cleaning
- features of contracts
- contractual requirements for pool builder and client.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to swimming pools and spas
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace policies and procedures relevant to project handover
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4008 Install above-ground swimming pool

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to install variously shaped above-ground swimming pools. It includes preparing level and sloping sites and ancillary equipment for connection.

This unit applies to a range of contexts and reflects the role of those who are responsible for installation processes involving excavation and base preparation for above-ground:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan to install	1.1 Access, read and interpret relevant information from
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- above-ground swimming pool.
- 1.2 Interpret and apply work health and safety and environmental requirements.
 - 1.3 Confirm type and location of pool with client.
 - 1.4 Calculate and order base materials and filtration components.
 - 1.5 Determine commencement date and schedule delivery of material and components and required plant and equipment.
 - 1.6 Apply relevant WHS regulations and codes when locating and preparing for work near existing underground and overhead services.
 - 1.7 Determine job priorities and sequence job tasks in consultation with others on site.
- 2 Prepare for pool installation.
- 2.1 Select, fit and use personal protective equipment appropriate for the activity.
 - 2.2 Select and check tools and equipment for serviceability.
 - 2.3 Set out and mark pool position and finish height.
 - 2.4 Remove grass and topsoil and excavate to the determined depth and level.
 - 2.5 Fill, spread, screed and compact base to specified level.
- 3 Assemble pool.
- 3.1 Determine starting point and prepare pool base and wall components.
 - 3.2 Assemble wall material following manufacturer instructions.
 - 3.3 Complete all fixtures and mask to protect internal lining.
 - 3.4 Install, without damage, internal pool liner in accordance with manufacturer instructions.
 - 3.5 Secure lining and finish pool capping.

- | | | | |
|---|-------------------------------|-----|---|
| 4 | Install recirculation system. | 4.1 | Measure, locate and fit skimmer and return. |
| | | 4.2 | Locate and install pump, plumbing pipes and filtration system accordance with specifications. |
| | | 4.3 | Fill pool and check pool and ancillary equipment for leaks. |
| | | | |
| 5 | Clean up site. | 5.1 | Clear the work area and reuse, recycle or dispose of materials in accordance with workplace and environmental requirements. |
| | | 5.2 | Clean tools and equipment, check for serviceability, report any damage or faults and store and secure. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4008 Install above-ground swimming pool

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing two above-ground swimming pools. The installations must involve:

- differently sized and shaped above-ground swimming pools
- the use of different prefabricated materials on each pool.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards and codes relevant to above-ground swimming pools and spas
- pool fencing requirements
- types and materials of pool covers
- relevant sections of the National Construction Code (NCC)
- manufacturer instructions for installing above-ground swimming pools
- properties, applications and limitations of swimming pool and spa fabrication materials, products and components
- processes, procedures and techniques for:
 - levelling pool and spa base
 - installing and assembling pools and spas
 - connecting filtration, recirculation, heating and lighting systems
- licensing and competency requirements for installing swimming pool and spa ancillary equipment
- operational and functional features of tools and equipment
- relevant sections of work health and safety (WHS) Acts and regulations
- workplace procedures and workplace safety:
 - hierarchy of control
 - hazardous manual tasks
 - temporary safety barriers and fences around pools
- workplace and environmental requirements relating to waste disposal and clean-up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to above-ground swimming pools and spas
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4009 Undertake interior finishing of swimming pools and spas

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to undertake interior finishes to variously shaped swimming pools and spas. It includes applying interior finishes to concrete and fibreglass swimming pools and spas.

This unit reflects the role of those who are responsible for the application of interior finish to swimming pools and spas. It applies in a range of contexts:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Plan interior finishing of swimming pool and spa.
 - 1.1 Access, read and interpret relevant swimming pool and spa information from plans, specifications, codes and standards.
 - 1.2 Interpret and apply work health and safety and environmental requirements.
 - 1.3 Identify properties of materials and requirements for application and installation for internal finish of the project.
 - 1.4 Calculate material quantities required as specified.
 - 1.5 Determine project timeframes, job priorities and sequence of job tasks in consultation with others on site.
 - 1.6 Schedule delivery of material and components and required plant and equipment.

- 2 Prepare for the finishing work.
 - 2.1 Confirm materials match the delivery docket and comply with job specifications.
 - 2.2 Select, fit and use personal protective equipment appropriate for activity.
 - 2.3 Check plant and equipment for serviceability.
 - 2.4 Drain excess water from swimming pool and spa.
 - 2.5 Protect lighting and recirculation system components against damage from subsequent works.

- 3 Finish pool and spa interior.
 - 3.1 Repair damage to or imperfections in swimming pool and spa surface.
 - 3.2 Use appropriate techniques to wash, seal and bond surface.
 - 3.3 Protect and maintain pool shell to avoid premature drying of pool finish.
 - 3.4 Establish a starting point for application of interior finish and ensure correct process and sequence are followed.
 - 3.5 Check application techniques for consistent thickness, colour, shape and smoothness.

- 3.6 Confirm interior finish is completed to specifications and to manufacturer guidelines.
- 4 Clean up site.
 - 4.1 materials in accordance with workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability, report any damage or faults and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4009 Undertake interior finishing of swimming pools and spas

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by applying an interior finish to two different swimming pool or spa projects.

One project must use concrete and one project must use fibreglass.

As a minimum, the finish must be applied to a corner of a pool or spa, extending one metre deep and one metre wide in all directions, including the radius on the floor of the pool.

In doing this, the candidate must:

- prepare the work area to meet safety requirements
- clean and prepare surface to key and bond interior finish
- apply material maintaining a uniform interior surface finish
- protect finished surface to maintain quality until dry.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards and codes relevant to interior finishing of swimming pools and spas
- swimming pool and spa project plans, specifications, standards and codes
- National Construction Code (NCC)
- properties, applications and limitations of swimming pool and spa materials, products and components used for interior finishing
- processes, procedures and techniques for:
 - measuring and installing vinyl liner to variously shaped swimming pools and spas
 - applying interior finishes to pools and spas:
 - marblesheen
 - pebblecrete
 - paint
 - fibreglass
- operational and functional features of tools and equipment

- workplace procedures and workplace safety:
 - hierarchy of control
 - temporary safety barriers and fences around pools
 - hazardous manual tasks
 - hazardous chemicals
 - falls from heights
- workplace and environmental requirements relating to waste disposal and clean-up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to above-ground swimming pools and spas
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4010 Lay swimming pool and spa coping

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence corrected for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to lay different types of coping finishes to swimming pools and spas.

This unit reflects the role of those who are responsible for the laying and finishing of coping to variously shaped swimming pools and spas. It applies in a range of contexts:

- private swimming pools
- public swimming pools, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan to lay swimming pool and spa coping.	<ul style="list-style-type: none">1.1 Access, read and interpret relevant swimming pools and spas coping information from plans, specifications, codes and standards.1.2 Interpret and apply work health and safety and environmental requirements.1.3 Confirm type of material, pattern and finish for swimming pool and spa coping.1.4 Calculate specified coping and material quantities.1.5 Determine job priorities and sequence job tasks and timelines in consultation with others on site.1.6 Schedule delivery of material and required plant and equipment.
2 Prepare for the coping work.	<ul style="list-style-type: none">2.1 Select, fit and use personal protective equipment appropriate to activity.2.2 Check materials for damage, quality and compliance with work specifications.2.3 Check plant and equipment for serviceability.2.4 Prepare surfaces for coping as specified and stated in manufacturer requirements.
3 Lay coping.	<ul style="list-style-type: none">3.1 Set out finished height, width, levels, falls and pattern for coping.3.2 Mix and apply adhesives or cement as stated in manufacturer specifications.3.3 Lay coping to ensure colours are blended, overhang into pool and spa is3.4 Install expansion joints to comply with standards and manufacturer recommendations.3.5 Clean coping surface using recommended products and apply sealants as specified.

- 4 Clean up site.
 - 4.1 Clear the work area and reuse, recycle or dispose of materials in accordance with workplace and environmental requirements.
 - 4.2 Clean tools and equipment, check for serviceability, report any damage or faults and store and secure.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4010 Lay swimming pool and spa coping

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Performance Evidence corrected for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by laying coping for two different swimming pool or spa projects:

- one project must have curved edges and one project must have square corners
- each project must use different types of coping.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, codes and standards relevant to swimming pool and spas
- swimming pool and spa project plans and specifications
- relevant sections of National Construction Code (NCC)
- pool fencing requirements
- properties, applications and limitations of swimming pool and spa coping materials and products:
 - poured concrete
 - brick
 - precast concrete
 - tiles
 - pavers
 - natural stone
- processes, procedures and techniques for:
 - preparing surfaces for laying of various types of coping
 - setting out different patterns for different shapes and sizes of coping
 - laying different coping types and shapes to various patterns and designs

- operational and functional features of tools and equipment
- workplace procedures and workplace safety:
 - hierarchy of control
 - temporary safety barriers and fences around pools
 - hazardous manual tasks
 - hazardous chemicals
 - falls from heights
 - exposure to silica
- workplace and environmental requirements relating to waste disposal and clean-up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to swimming pools and spas
- relevant sections of the NCC
- project plans, specifications and manufacturer instructions
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSPS4011 Install precast concrete swimming pools

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Application

This unit specifies the skills and knowledge required to install precast concrete swimming pools (precast pools). A precast pool must have a total mass not greater than 12,000 kg (delivered weight). Products of a greater mass are not considered a precast pool.

It includes preparing for and installation of filtration, circulation, heating and lighting systems.

This unit reflects the role of those who are responsible for the installation process and the management of excavation and heavy lifting equipment to complete the installation. It applies in a range of contexts:

- private swimming pools
- public swimming pools, including:
 - hotels, motels and apartments.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks, and their own judgement to deal with predictable and sometimes unpredictable problems.

No licensing or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Swimming Pool and Spa Building

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan installation of precast pool.	<ul style="list-style-type: none">1.1 Access, read and interpret relevant information from plans, specifications, codes and standards.1.2 Interpret and apply work health and safety and environmental requirements.1.3 Identify and confirm with client type and location of filtration and circulation system.1.4 Calculate and order materials and components.1.5 Determine commencement date and schedule delivery of precast pool and required plant and equipment.1.6 Locate existing underground and overhead services prior to commencement.1.7 Determine job priorities and sequence job tasks in consultation with others on site.
2 Prepare to install precast pool.	<ul style="list-style-type: none">2.1 Select, fit and use personal protective equipment appropriate to activity.2.2 Set out and mark pool position, finish height and excavation depth.2.3 Excavate to set-out depth and side clearance, allowing for backfill.2.4 Select and prepare base in accordance with soil classifications of site.2.5 Confirm installation of circulation pipework to precast pool.2.6 Confirm traffic management requirements for location.
3 Install precast pool and commission ancillary systems.	<ul style="list-style-type: none">3.1 Implement requirements for managing traffic during precast pool installation.3.2 Communicate with crane service provider to lift, position and set precast pool to the specified level.3.3 Attach ancillary equipment and piping to precast pool.

- 3.4 Fill pool with water and balance water chemistry.
 - 3.5 Commission filtration, circulation, heating and lighting systems.
 - 3.6 Clean up the work area in accordance with workplace and environmental requirements.
- 4 Conduct client handover.
- 4.1 Confirm project completion and supply of inclusions with client.
 - 4.2 Demonstrate operation and inform client of settings, adjustments and routine maintenance requirements.
 - 4.3 Supply client with precast pool equipment guarantees, warranties and

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSPS4011 Install precast concrete swimming pools

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing one precast concrete swimming pool.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- regulations, standards, codes and permits relevant to installation of precast concrete swimming pools:
 - National Code of Practice for Precast Tilt-Up and Concrete Elements in Building Construction
 - Australian Standards
- relevant sections of the National Construction Code (NCC)
- precast pool project plans and specifications
- properties, applications and limitations of precast concrete swimming pool materials and swimming pool products and components
- processes and procedures for:
 - pool excavation
 - types of base preparations – screed and compact base, concrete slab
 - lifting, setting and levelling precast concrete swimming pools
 - connecting filtration and circulation systems
- licensing and competency requirements for installing swimming pool and spa ancillary equipment
- operational and functional features of tools and equipment
- workplace safety:
 - hierarchy of control
 - temporary safety barriers and fences around pools
 - hazardous manual tasks
 - competency requirements for operating pumping equipment

- types, advantages and environmental efficiencies of swimming pool and spa covers
- workplace and environmental requirements relating to waste disposal and clean-up.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or in a simulated workplace environment.

Candidates must have access to:

- regulations, standards and codes relevant to swimming pools and spas
- relevant sections of the NCC
- project plans, specifications and manufacturer instruction
- workplace safety and environmental requirements.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSUS4001 Implement and monitor environmentally sustainable work practices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS4001A Implement and monitor environmentally sustainable work practices. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to effectively analyse, implement and monitor environmentally sustainable work practices and their effectiveness in the workplace. It includes contributing to consumer environmental efficiency.

This unit of competency applies to those with responsibility for a specific work group, area or worksite, who develop processes and tools and lead a work group or team to improve environmental sustainability.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Sustainability

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Investigate current practices in relation to resource usage.	<ul style="list-style-type: none">1.1 Identify current and relevant environmental regulations applying to the organisation.1.2 Assess procedures and practices for ensuring compliance with environmental regulations.1.3 Collect data and information on environmental and resource efficiency systems and procedures.1.4 Analyse and document current purchasing strategies.1.5 Access and analyse information and data for current work processes and products.1.6 Measure and document current resource usage of the work area, site or group and provide findings to stakeholders, key personnel and specialists.
2 Set targets for improvement.	<ul style="list-style-type: none">2.1 Seek input and feedback regarding process inefficiencies, environmental hazards and risks and opportunities for improvements from stakeholders, key personnel and specialists.2.2 Source external information and data from supplier and contractor invoices, tenders and quotes.2.3 Evaluate alternative solutions to worksite environmental issues.2.4 Set efficiency targets.
3 Implement performance improvement strategies.	<ul style="list-style-type: none">3.1 Source and implement techniques, tools, technology and strategies to assist in achieving targets.3.2 Apply workplace continuous improvement strategies and communicate solutions to stakeholders, key personnel and specialists.3.3 Integrate and implement workplace environmental and resource efficiency improvement plans in conjunction with other operational activities.3.4 Cost full value of environmental strategies against current assets and expenditure.

- 3.5 Seek feedback, ideas and suggested actions regarding implemented environmental and resource efficiency plans from management, stakeholders, key personnel and specialists.
- 4 Monitor performance.
- 4.1 Document outcomes and communicate reports on targets to key personnel and stakeholders.
- 4.2 Re-evaluate environmental strategies.
- 4.3 Review and readjust targets and modify new tools and strategies.
- 4.4 Promote successful strategies and, where possible, reward participants.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
 - collect, interpret and measure data to identify and improve sustainable practices
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS4001A Implement and monitor environmentally sustainable work practices.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSUS4001 Implement and monitor environmentally sustainable work practices

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS4001A Implement and monitor environmentally sustainable work practices. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by analysing and monitoring effective sustainable workplace practices on at least one worksite, area or construction work group.

In doing this, the candidate must:

- access, collect, analyse and organise data from a variety of sources to inform and advise opportunities for improvement
- devise strategies and practices to improve environmental and resource efficiency
- develop and implement improvement plan and introduce tools and technology.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- government legislation, regulations, codes and standards:
 - environmental protection
 - Biodiversity Conservation Act
 - National Construction Code (NCC)
- environmental and sustainability practices:
 - efficient use of resources and materials
 - maximising opportunities to use renewable, recyclable, reusable and recoverable resources
 - management and treatment of waste and waste products
 - implementing and using alternative practices, procedures or materials to reduce or eliminate resource consumption on worksite
 - eliminating the use of hazardous and toxic materials
 - addressing environmental and resource sustainability initiatives
 - referring to federal government five-star rating for all new homes

- workplace environmental and sustainability issues:
 - how tradespersons can contribute to environmental sustainability
 - hazards and risks associated with worksite supervision
 - job specifications and strategies and procedures to maximise opportunities and minimise impacts
- environment industry associations
- methods, techniques and tools to measure environmental impact:
 - accessing the skills of others as appropriate to the specific industry context
 - environmental site management plans
 - examination of invoices from suppliers
 - examination of relevant information and data
 - integration of environmental and sustainability specifications in quotes and tenders
 - measurements made under different conditions
 - recommendation of sustainable products and practices to stakeholders
- workplace safety requirements:
 - hierarchy of control
 - risk management.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- government legislation
- current industry and Australian codes and standards
- current project plans, specifications and manufacturer's product information
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- equipment, technology, applications and software to collect, interpret and measure data and develop costings and reports.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSUS4002 Use building science principles to construct energy efficient buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS4002A Use building science principles to construct energy efficient buildings. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to incorporate building science principles into the construction of energy efficient buildings. It includes the ability to research, use constructive thinking and problem-solving processes to identify appropriate sustainable solutions.

This unit of competency applies to those who apply building science principles to construction of energy efficient residential and commercial buildings.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable energy efficient building problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Sustainability

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Determine the building envelope expectations.	<p>1.1 Identify type of use and energy efficiency expectations of the building.</p> <p>1.2 Identify risks associated with occupants' indoor activities and health and safety considerations.</p> <p>1.3 Determine environmental and climatic conditions that impact the resilience of building materials.</p> <p>1.4 Identify construction methods that factor in durability of materials.</p> <p>1.5 Consult relevant legislation, standards, regulations and codes to identify minimum energy efficient standards to be met.</p> <p>1.6 Consult relevant domestic and international codes, standards and examples of best practice that meet or exceed current energy efficient standards.</p>
2 Assess energy efficiency construction.	<p>2.1 Research building science principles supporting energy efficiency.</p> <p>2.2 Review embodied energy of the specified products or materials to evaluate the energy efficiency.</p> <p>2.3 Research heating, ventilation and air conditioning (HVAC) systems to identify levels of energy efficiency, ventilation and indoor air quality.</p> <p>2.4 Review mechanical ventilation systems and equipment to aid air flows for appropriateness and operational costs.</p> <p>2.5 Research and identify durability and appropriateness of moisture and vapour barriers to gain high levels of energy efficiency.</p>
3 Decide on method of construction.	<p>3.1 Identify site location and building position to maximise energy efficiency relating to environmental factors, climatic conditions and use of building.</p> <p>3.2 Identify and assess energy efficiency of thermal energy, heating and cooling, air and moisture flows throughout the building.</p>

- 3.3 Develop strategies to minimising unwanted air leakages.
- 3.4 Evaluate and select mechanical ventilation systems and equipment for appropriateness to the site and operational costs.
- 3.5 Evaluate and select materials for interior and exterior barriers for energy efficiency, durability and appropriateness for building site climate.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use technology and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS4002A Use building science principles to construct energy efficient buildings.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSUS4002 Use building science principles to construct energy efficient buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS4002A Use building science principles to construct energy efficient buildings. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by using building science principles in the development of recommendations for the use of energy efficient materials, products and construction methods for one residential construction project and one commercial construction project.

In doing this, the candidate must:

- incorporate building science principles for energy efficient materials and products used in the building envelope
- research and report on a range of energy efficient design and construction methods with a specific focus on:
 - energy efficient heating, cooling and ventilation
 - energy efficient construction methods and systems
 - effects of condensation, dampness, weatherproofing and waterproofing when preventative measures are incorrectly installed or ignored during construction.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- the National Construction Code (NCC)
- processes for the evaluation of energy efficiencies in buildings:
 - local and international research into building science methods
 - systems theory and analysis
 - manufacturer websites and technical data for energy efficient construction materials and systems
- theories and principles of efficient energy use of building and construction processes
- the impact on occupant's health and the adverse effect on material integrity and structural components by failing to meet design principles

- types, application and limitations of different construction materials when selecting construction materials and products for energy efficient buildings
- the role of embodied energy when selecting construction materials and products for energy efficient buildings
- general and environmental construction terminology
- effective energy efficient treatment of the building envelope:
 - gaps around ceiling downlights
 - gaps around insulating material
 - gaps under and around doors
 - openings for floor or ceiling ducts used to transmit heating or cooling
 - wall, floor or ceiling cracks
 - window seals
 - thermal mass
- extreme weather conditions impacting on a building:
 - cyclonic activity
 - extreme heat
 - risk of fire
 - heavy rain and flooding
 - storm weather
- work place safety requirements:
 - working with insulation
- digital tools and devices to communicate and collaborate effectively with others
- a range of digitally-based technology and applications for researching information.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- relevant government building and construction legislation
- current building and construction codes and Australian Standards
- the NCC
- construction drawings and specifications, organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- digital technology to research information and devices, applications and software to develop and save documents electronically.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSUS4003 Maximise energy efficiency through applied trade skills

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS4003A Maximise energy efficiency through applied trade skills. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to undertake trade work using techniques and practices aimed at achieving high levels of energy efficiency in the finished work. It includes identifying and applying principles or techniques designed to maximise the energy efficiency characteristics of a building or project.

This unit of competency applies to builders and tradespeople who identify opportunities for energy efficiency gains during construction of the building envelope or finishing work within the residential or commercial construction work.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Sustainability

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- 1 Identify energy efficiency aims of the project.
 - 1.1 Use building science principles to identify efficiency expectations from plans, drawings and specifications.
 - 1.2 Confirm building envelope, energy efficiency requirements and specific instructions on priority areas in consultation with relevant personnel and stakeholders.
 - 1.3 Identify limitations and determine appropriate solutions to achieving energy efficiency requirements with relevant personnel.

- 2 Prepare for task.
 - 2.1 Identify comparable products and materials based on building science knowledge and project energy efficiency specifications.
 - 2.2 Check substituted materials and products for comparable energy efficiency characteristics for approval with relevant person.
 - 2.3 Identify and factor into work plan differences in standard practice to achieving energy efficient outcome, gain approval and adjust task timeframe.
 - 2.4 Calculate material quantity from plans and specifications.
 - 2.5 Locate materials ready for use in proximity to the work area.
 - 2.6 Select energy efficient plant, tools and equipment appropriate to carry out specified tasks.

- 3 Perform tasks using energy efficient techniques.
 - 3.1 Eliminate greenhouse gas emissions and avoid unnecessary waste of products and materials during the use of energy efficient techniques.
 - 3.2 Handle and use products and materials according to manufacturer specifications to ensure energy efficiency ratings are maintained when installed.
 - 3.3 Treat cavities and openings created in the building envelope during the project to avoid unnecessary air leakages.
 - 3.4 Maximise opportunities for achieving energy efficiency

outcomes by minimising energy leakages.

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| 4 | Finalise and evaluate work. | 4.1 | Arrange assessment of work undertaken with qualified energy assessor to confirm extent of energy efficiency outcomes achieved. |
| | | 4.2 | Identify and note improvements in own work practices to ensure energy efficiency outcomes for future development. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
 - use mobile and communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS4003A Maximise energy efficiency through applied trade skills.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSUS4003 Maximise energy efficiency through applied trade skills

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS4003A Maximise energy efficiency through applied trade skills. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by undertaking and completing three different activities to maximise energy efficiency of the process or finished product. The three activities may be related to or on the same construction project.

In doing this, the candidate must:

- use principles or techniques that are designed to maximise the energy efficiency characteristics of the building or project
- apply their trade skills to energy efficient practices during the project.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- general construction terminology
- building science principles:
 - building envelope
 - effective ventilation
 - heat, air and moisture flows:
 - conduction
 - convection
 - radiation
 - interaction between occupants, building components and systems, and the environment both indoors and out
 - moisture management and condensation
- energy efficient techniques:
 - advanced framing or optimal value engineering for energy efficient framing
 - appropriate selection and installation of insulation without compressing it

- conserving energy by effectively sealing the building envelope to minimise air leakage (exfiltration and infiltration) in the building envelope, shell or enclosure
- effectively installing windows and flashing without breaking the building envelope
- effectively selecting and installing thermal insulation
- minimising embodied energy
- sealing, insulating and minimising duct leakage
- sealing leaky joints
- selecting recycled materials to minimise production energy
- sourcing materials or products locally to minimise transport energy
- energy efficiency expectations:
 - acoustic and thermal insulation between zones and rooms
 - achieving relevant energy efficient requirements in the National Construction Code (NCC), and other relevant codes and regulations
 - achieving or maintaining a home energy rating, commercial building rating, or equivalent energy rating
 - effectively selecting and using thermal mass
 - energy conservation
 - minimising infiltration
 - minimising the heat loss and maximising the heat gain based on the requirements of the building reflective of the climatic zones
 - minimising thermal bridging
 - passive solar design approach
 - reducing or minimising energy costs and consumption to heat and cool the building
 - thermal resistance
 - ventilation, heat and energy recovery
 - zero energy homes
- workplace safety:
 - hierarchy of control
 - hazardous manual tasks
- processes, procedures and techniques for:
 - calculating material for the task
- organisation's project quality requirements
- environmental requirements and sustainability principles
- properties, characteristics and limitations of approved materials, products and components:
 - structural insulated panels
 - mud bricks
 - solar panels and battery storage
 - glazing
 - straw bale building products
- functional and operational features of tools and equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- government building and environmental legislation
- relevant industry codes and standards
- current project plans, specifications and manufacturer's product information
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment, technology, applications and software to research product and material information and calculate energy gains.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSUS5001 Develop workplace policies and procedures for sustainability

Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Knowledge Evidence updated for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and equivalent to CPCSUS5001A Develop workplace policies and procedures for sustainability. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to develop and implement organisational policies and procedures to continuously support resource efficiency and environmentally sustainable work practices. It includes sourcing and gathering information, including from regulatory sources and relevant stakeholders, to plan, develop and implement policies.

This unit of competency applies to those with managerial responsibilities for identifying approaches to create strategies and develop, implement and review workplace policies and procedures for sustainability.

The context of this unit applies to all industry sectors and sections within an organisation, including a worksite, designated work area, in transit and/or an office.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Sustainability

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 | Develop a workplace sustainability policy. | 1.1 | Define the scope of sustainability policy. |
| | | 1.2 | Identify and consult with key stakeholders to gather input and feedback as part of the policy development process. |
| | | 1.3 | Compile information and strategies relating to essential sustainability objectives to structure policies and procedures. |
| | | 1.4 | Make recommendations for policy options based on likely effectiveness, timeframes and cost. |
| | | 1.5 | Develop policy that reflects an organisation's commitment to sustainability as an integral part of business planning and business opportunity. |
| | | 1.6 | Agree on appropriate methods of implementation. |
| 2 | Communicate the policy. | 2.1 | Promote the policy, including its expected outcome, to key stakeholders. |
| | | 2.2 | Inform those involved in implementing the policy of responsibilities, activities to be undertaken and expected outcomes. |
| 3 | Implement and monitor the policy. | 3.1 | Develop and communicate procedures to assist in the implementation of the policy. |
| | | 3.2 | Implement continuous improvement strategies for resource efficiency. |
| | | 3.3 | Establish record systems for tracking approaches to sustainability continuous improvements. |

- | | | | |
|---|-------------------------------|-----|--|
| 4 | Review policy implementation. | 4.1 | Document outcomes and provide feedback to key personnel and stakeholders. |
| | | 4.2 | Investigate the success or otherwise of the policy. |
| | | 4.3 | Monitor records to identify trends requiring remedial action and use information to promote continuous improvement of performance. |
| | | 4.4 | Modify policies and procedures as required to ensure improvements are made and compliance is maintained. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- writing skills to:
 - prepare written reports, policies and procedures requiring precision of expression and language and structure suited to intended audience
- communication skills to:
 - manage different points of view and dissenting stakeholders
 - present information
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS5001A Develop workplace policies and procedures for sustainability.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSUS5001 Develop workplace policies and procedures for sustainability

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Knowledge Evidence updated for clarity.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS5001A Develop workplace policies and procedures for sustainability. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing and implementing policies and procedures for sustainable work practices for one of the following:

- a construction project worksite
- a designated work area
- an office

In doing this, the candidate must:

- gather and compile information from various sources
- engage with stakeholders and key personnel to plan the policy development process and identify requirements and issues that may cause disputes
- integrate into the sustainability policy:
 - minimising resource use
 - applying waste recovery strategies
 - reducing or eliminating use of hazardous chemicals and toxic materials
 - employing lifecycle management approaches at all stages of work
- review policies using performance indicators against measurable benchmarks to identify improvements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- environmental and sustainability legislation, requirements, policies, standards and guidelines including:
 - Environmental Protection and Biodiversity Conservation Act
 - *ISO 14001 Environmental Management Systems*
- government building legislation, codes and standards
- the National Construction Code (NCC)
- organisational policies and procedures, quality systems and best practice approaches
- addressing sustainability initiatives:
 - lifecycle management and thinking
 - elimination or reduction of greenhouse gases
 - star rating for all new homes
 - green purchasing programs to purchase sustainable products
 - green plumbing
 - product stewardship
 - supply chain management to influence suppliers to take up sustainability approaches
 - sustainability action plans or frameworks
 - sustainability covenants and compacts
 - triple bottom line reporting
 - purchasing of carbon credits or green power
 - raising awareness among stakeholders through product advice and user recommendations
 - reduce the consumption of non-renewable resources
 - reducing or eliminating the use of hazardous and toxic materials
 - resource, water and energy audits included in quote or tender
 - training of staff in principles and techniques of sustainability
 - use of solar or renewable energies and water
 - waste treatment initiatives (materials, resources and water)
 - maximising the use of recycled, renewable, reusable and reclaimed resource opportunities
 - efficient use of resources, energy and water
 - environmental site management to minimise stormwater pollution
 - installation of efficient appliances, techniques and recommendations for consumer use and opportunities
- properties, characteristics and limitations of approved building materials and components
- sustainability principles and concepts
- workplace safety requirements:
 - hierarchy of control
 - hazardous substances
 - risk management
- industry associations, such as:
 - Housing Industry Association (HIA)

- Master Builders Association
- Green Building Council of Australia (GBCA)
- sustainability schemes and rating systems:
 - HIA – GreenSmart
 - Master Builders Association of Victoria – Green Living
 - GBCA – Green Star
 - National Australian Building Environmental Rating Scheme (NABERS)
 - Australian Building Greenhouse Rating
 - Leadership in Energy and Environmental Design (LEED)
 - Passive House.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current and relevant environmental and sustainability legislation, requirements, policies, standards and guidelines
- national, state and territory and local government building codes and standards
- technology, applications and software systems for recording and filing documentation, researching, extracting, analysing and presenting information, interpreting data and developing documents and reports.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSUS5002 Develop action plans to retrofit existing buildings for energy efficiency

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS5002A Develop action plans to retrofit existing buildings for energy efficiency. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to develop plans to improve the energy efficiency of an existing building. It includes researching appropriate products, materials and systems and engaging with clients and stakeholders when retrofitting a building.

The unit of competency applies to building designers, tradespeople and building project managers involved in the design or development of retrofits for energy efficiency.

This unit of competency applies to those who apply skills and knowledge to identify, analyse and evaluate approaches to sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Sustainability

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

- essential outcomes. demonstrate achievement of the element.
- 1 Plan retrofit processes.
 - 1.1 Discuss client's use of the building and specific expectations of energy efficient retrofit priorities and incorporate into planning.
 - 1.2 Initiate energy assessment or review report from a prior assessment and discuss with key stakeholders to determine energy conservation measures.
 - 1.3 Provide a client with an overview of recommended processes and information relevant to generating an energy efficient retrofit.

 - 2 Evaluate opportunities to improve energy conservation and efficiency of an existing building.
 - 2.1 Review and evaluate recommendations from energy efficiency assessor for input into the retrofit action plan.
 - 2.2 Identify limitations and obstacles involved in the energy efficiency upgrade of a building and develop appropriate solutions.
 - 2.3 Identify and manage risks of retrofitting an existing building for improved energy efficiency, including possible installation of mechanical ventilation systems.
 - 2.4 Develop and cost strategies that provide a measurable increase in the operational energy efficiency of an existing building.
 - 2.5 Assess structural adequacy of the existing building to determine appropriateness of retrofit solutions for energy efficiency.

 - 3 Research and select energy efficient materials, products and systems.
 - 3.1 Research materials, products and systems specifications for appropriateness to the energy efficiency for the existing building.
 - 3.2 Source literature and consult with manufacturer representatives to identify installation and operational specifications.
 - 3.3 Check compliance requirements for selecting and installing materials, products and systems.
 - 3.4 Assess thermal and acoustic insulation of the building to determine energy efficiency rating.

- 3.5 Determine quality of insulation and installation to improve insulating properties of the building.
- 4 Finalise a retrofit action plan.
 - 4.1 Develop final a retrofit action plan to comply with organisational procedures.
 - 4.2 Explain projected benefits of undertaking each of the proposed retrofit measures to a client.
 - 4.3 Obtain client sign-off and finalise documentation of the agreed plan.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
 - calculate areas, volume and mass to determine dimensions and plan design
 - convert data into measurable and comparable information
- problem-solving skills to:
 - recognise and overcome design and structural construction problems
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS5002A Develop action plans to retrofit existing buildings for energy efficiency.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSUS5002 Develop action plans to retrofit existing buildings for energy efficiency

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS5002A Develop action plans to retrofit existing buildings for energy efficiency. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing an action plan to retrofit and improve the energy efficiency of an existing residential or commercial building up to a maximum of three storeys.

In doing this, the candidate must:

- determine class, type, condition and use of a building
- produce energy efficiency comparison of an existing building and retrofitted building
- produce costing, timelines and products and materials for the retrofit project
- source applications for permits and service connections
- identify limitations and obstacles to retrofit and determine solutions
- develop a process for project risk management.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building science principles and their application to the retrofitting of existing buildings for improved energy efficiency
- environmental and sustainability legislation, requirements, policies, standards and guidelines:
 - environmental protection
 - biodiversity conservation
- national, state and territory and local government building codes and standards
- the National Construction Code (NCC)
- organisational policies and procedures, quality systems and best practice approaches
- addressing retrofitting expectations and benefits:
 - improved levels of comfort for the occupants
 - increased air changes per hour to improve indoor air quality

- increased durability of the building
- potential for improved return on investment
- reduction in and prevention of mould
- reduction in heating and cooling costs
- fire resistance and resistance from bushfire attack
- risks of retrofitting:
 - budget constraints
 - condition of existing building
 - local council planning provisions
 - land overlays and requirements relating to neighbourhood character
 - orientation of the existing building
 - original design and construction of existing building
 - position of existing services to the building
 - presence of protected vegetation adjacent to existing building
 - protection of existing building under heritage listing
 - proximity of other buildings or structures
 - sealing the building envelope:
 - air pressure differentials
 - combustion
 - moisture and mould
 - poor indoor air quality
- properties, characteristics and limitations of selected building materials and components
- processes, procedure and techniques of:
 - energy assessment to develop energy efficient strategies
 - calculating using measurements and formulas
- retrofitting strategies:
 - light fittings
 - smart technology or motion sensors
 - insulation
 - sealing building envelope
 - solar photovoltaic systems
 - energy sources
- sustainability principles and concepts
- workplace safety:
 - hierarchy of control
 - hazardous manual tasks
 - working at heights
- project plans, specifications and working drawings
- general construction terminology.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current and appropriate environmental and sustainability legislation, requirements, policies, standards and guidelines
- government building and environmental requirements, codes and standards
- project plans, specifications and material manufacturer's specifications
- technology, applications and software systems for researching, extracting, analysing and presenting information, interpreting data and developing documents and reports to facilitate the development of an action plan to retrofit an existing building for energy efficiency.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSUS5003 Manage energy efficient building methods and strategies

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS5003A Manage energy efficient building methods and strategies. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to ensure that energy efficient building methods and strategies on new or existing building projects, designed to satisfy energy efficient ratings and requirements, are supported by employees and contractors. It includes conducting appropriate performance testing of the construction to determine adherence to energy efficiency methodologies and techniques.

The unit of competency includes ensuring that work undertaken to construct an energy efficient building, or to retrofit an existing building for improved energy efficiency, is performed as designed and reflects energy efficient specifications.

This unit of competency applies to builders and site managers overseeing the construction of buildings designed to meet energy efficient ratings or improve the energy efficiency characteristics of a residential or commercial building.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Sustainability

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Plan and prepare to construct an energy efficient building. | 1.1 Review plans, drawings and specifications to identify energy efficient requirements of finished building or works. |
| | 1.2 Determine the building class and type. |
| | 1.3 Consult relevant stakeholders to identify the purpose and use of the building and the energy efficiency expectations of its owners or occupiers. |
| | 1.4 Source, select and cost construction materials and products to conform to energy efficiency expectations of the building or works. |
| | 1.5 Schedule works to be undertaken to support the energy efficient building strategy. |
| | 1.6 Resource the project with appropriately skilled tradespeople with energy efficiency competency. |
| | 1.7 Develop strategies for the disposal, recovery or reuse of waste materials for the project. |
| | 1.8 Communicate budget, timelines and impact of energy efficiency of the project to the owner, occupier and other stakeholders. |
| 2 Monitor project energy efficiency. | 2.1 Evaluate and quantify the impact on energy efficiency against the expectations to assist in decision-making processes of construction methods, materials selection and alteration of works. |
| | 2.2 Assess the capacity to maximise energy efficiency by improving building envelope sealing prior to other work commencing. |
| | 2.3 Brief trades and other workers on the building project regarding expected energy efficiencies, quality of work, methods and techniques to be used. |
| | 2.4 Monitor the project and maintain communication with subsequent trades to ensure benefits of energy efficient requirements and techniques are not lost or diminished. |

- | | |
|--|---|
| 3 Evaluate and communicate energy efficiency outcomes. | 3.1 Assess works undertaken for adherence to energy efficiency processes. |
| | 3.2 Conduct and record handheld thermal imaging assessment of building or works to determine presence of unwanted heat and air leakages and address findings where necessary. |
| | 3.3 Conduct duct testing to identify the location of leakages and implement remedial work to address findings. |
| | 3.4 Seek external expert verification of star ratings for building energy efficiency. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
 - use statistical data to measure and compare energy efficiency
- oral communication skills to:
 - use appropriate technical language to convey a design and construction brief to a work group, client and stakeholders
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS5003A Manage energy efficient building methods and strategies.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSUS5003 Manage energy efficient building methods and strategies

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS5003A Manage energy efficient building methods and strategies. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by managing energy efficient building methods and strategies for two building and construction projects:

- one residential - Class 1 or 10 to a maximum of two storeys
- one commercial - Class 2 to 9, Type B or C.

In doing this, the candidate must:

- prepare costing of energy efficient materials, products and labour
- prepare a project schedule with techniques and strategies, products and time lines to communicate to stakeholders and on-site tradespeople
- determine processes for minimising, reusing or reclaiming waste.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building science principles and their application for improved energy efficiency
- environmental and sustainability legislation, requirements, policies, standards and guidelines
- Environment Protection and Biodiversity Conservation Act
- government building and environmental requirements, codes and standards
- the National Construction Code (NCC)
- organisational policies and procedures, quality systems and best practice approaches
- properties, characteristics and limitations of approved building materials and component:
 - structural insulated panels
 - glazing
 - thermal mass

- impacts on materials and products used in different climate zones and environmental conditions
- processes, procedure and techniques of:
 - building methods and installation of products
 - evaluating energy efficiencies in buildings
 - sealing the building envelope
- sustainability principles and concepts
- approaches to waste management consistent with principles of energy efficiency:
 - processes for minimising, reusing, recycling and recovering waste materials
- workplace safety:
 - hierarchy of control
- project plans, specifications and working drawings
- general construction terminology
- benchmarks to meet standards and rating systems for energy efficiency, such as:
 - Green Star requirements
 - WELL buildings
 - Passive House
- techniques which support energy efficiency:
 - protecting the air barrier by minimising and sealing gaps using advanced framing techniques to increase construction productivity, reduce thermal bridging and increase operational energy efficiency
 - installing insulation on the outside of the frame and in the roof, walls and floor
 - reducing the effect of thermal bridging
 - selecting appropriately sized heating, ventilation and air conditioning (HVAC) system, which considers the tightness of the structure and incorporates heat or energy recovery systems as appropriate for ventilation
 - using air or vapour barriers to ensure the entire building envelope is sealed, separating the inside environment from the outside
 - using thicker insulation to improve the building's thermal performance.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current and appropriate building, environmental and sustainability legislation, requirements, policies, standards, guidelines and accreditation/certification requirements

- Australian Standards and building industry codes of practice
- project plans, specifications and manufacturer's product and installation specifications
- business equipment, technology, applications and software systems for recording and filing documentation, researching, extracting, analysing and presenting information, interpreting performance data and developing documents and reports.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCWHS3001 Identify construction work hazards and select risk control strategies

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Minor typographical error corrected in Elements and Performance Criteria 3.5. Knowledge Evidence is formatted for clarity.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCCWHS3001 Identify construction work hazards and select risk control strategies. Performance evidence updated to clarify volume and frequency.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 2.0.
New unit.

Application

This unit of competency specifies the skills and knowledge required to participate in preparing a job safety analysis (JSA) for general hazards, and a safe work method statement (SWMS) for high risk work hazards on construction sites as specified in work health and safety (WHS) legislation. It includes meeting all relevant requirements of the National Construction Code (NCC), Australian Standards and Commonwealth and state or territory legislation.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of CPCCWHS1001 Prepare to work safely in the construction industry meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Work health and safety

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|--|--|
| 1 Plan and prepare. | 1.1 Review job task, work site and compliance requirements. |
| | 1.2 Select and use personal protective equipment (PPE) for each part of the task. |
| | 1.3 Inspect work site and identify hazards relevant to job task. |
| | 1.4 Determine and record level of risk for each identified hazard. |
| 2 Prepare and implement job safety analysis (JSA). | 2.1 Review requirements of work health and safety legislation for preparation of job safety analysis (JSA) using template. |
| | 2.2 Break job task into logical steps, determine tools, equipment, plant and materials to be used for each step, and record on JSA. |
| | 2.3 Identify work site and task-related hazards and levels of risk relating to each step, and record on JSA. |
| | 2.4 Apply hierarchy of controls to determine risk control strategies for each hazard in each step of the job task, discuss and confirm with relevant personnel, and record on JSA. |
| | 2.5 Review work site and job task immediately before starting work and discuss JSA with relevant personnel to confirm as still applicable, or to amend as required. |
| | 2.6 Store JSA securely on site in accordance with compliance requirements. |
| 3 Prepare and implement safe work method | 3.1 Review requirements of work health and safety legislation for preparation of safe work method |

statement (SWMS) for high risk work.

statements (SWMS).

- 3.2 Determine work site conditions and job task requirements.
- 3.3 Determine and record high-risk work site and task hazards relevant to job task.
- 3.4 Break job task into logical steps, determine tools, equipment and materials to be used for each step, and record on SWMS.
- 3.5 Identify high-risk work site and task-related hazards and levels of risk relating to each step, and record on SWMS.
- 3.6 Apply hierarchy of controls to determine risk control strategies for each high-risk hazard in each step of the job task, discuss and confirm with relevant personnel, and record on SWMS.
- 3.7 Review work site and job task immediately before starting work and discuss SWMS with relevant personnel to confirm as still applicable, or to amend as required.
- 3.8 Store SWMS securely on site in accordance with compliance requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCWHS3001 Identify construction work hazards and select risk control strategies.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCWHS3001 Identify construction work hazards and select risk control strategies

Modification History

- Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
- Minor typographical error corrected in Elements and Performance Criteria 3.5. Knowledge Evidence is formatted for clarity.
- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCWHS3001 Identify construction work hazards and select risk control strategies. Performance evidence updated to clarify volume and frequency.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 2.0.
- New unit.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- developing, in consultation with relevant personnel, two Job Safety Analysis (JSA) for general hazards. Each JSA should be for a different job task and on a different work site
- revising a JSA prior to starting work, identifying changed conditions and where appropriate, amending the JSA to reflect changed hazards and risk control strategies
- developing, in consultation with relevant personnel, two Safe Work Method Statements (SWMS) for high-risk work. Each SWMS should be for a different job task and on a different work site.
- revising a SWMS prior to starting work, identifying changed conditions and where appropriate, amending the SWMS to reflect changed hazards and risk control strategies.

All work must be performed to the standard required in the workplace and must meet the requirements of work health and safety (WHS), the National Construction Code (NCC), Australian Standards, Commonwealth and state or territory legislation, manufacturers' specifications, and environmental plans and obligations.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian standards, industry guidelines, National Construction Code requirements, and codes of practice, including the Model Code of Practice for Construction Work when identifying construction site hazards and selecting risk control strategies
- format and content requirements for JSAs and SWMSs:
 - environmental requirements
 - public health and safety requirements
 - WHS requirements, including safe operating procedures
 - safety data sheets (SDS)
 - taking into account other work going on near the work area
 - common hazards and causes of incidents and near misses on construction sites
 - compliance requirements in relation to identified job tasks and work sites
 - construction hand and power tools, and equipment relevant to the identified job tasks, and requirements for their safe handling and operation
- processes for preparing SWMSs for high risk work in the construction industry:
 - principles and application of the hierarchy of controls
 - purpose and application of SDS when working with different materials
 - risk management strategies relevant to identified job tasks specified in the performance evidence
 - types of construction methods and materials used in both general hazards and high-risk construction work and risk factors inherent in their use and application
 - use and meaning of construction terminology used on construction work sites relevant to identifying site hazards and selecting suitable risk control strategies.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

AHCLSC307 Implement a retaining wall project

Modification History

Release Number	TP Version	Comments
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to install and construct a retaining wall.

This unit applies to individuals who take responsibility for their own work and for the quality of the work of others. They use discretion and judgement in the selection, allocation and use of available resources. All work is carried out to comply with workplace procedures.

No occupational licensing, legislative or certification requirements are known to apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Landscape (LSC)

Elements and Performance Criteria

Element	Performance criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for retaining wall project	1.1 Interpret plans and specifications 1.2 Identify equipment and material resource requirements according to the scope of the construction work 1.3 Identify workplace health and safety hazards, assess risks and implement controls

Element	Performance criteria
	1.4 Identify and ameliorate environmental impacts of the proposed works 1.5 Select, use and maintain personal protective equipment (PPE) 1.6 Select tools and equipment and check for serviceability 1.7 Organise delivery of materials to site according to workplace priorities
2. Mark out site for retaining wall	2.1 Erect site bunting and place safety signage 2.2 Locate services 2.3 Mark out the position of the retaining wall 2.4 Determine the location and depth of excavations from construction plans 2.5 Establish profiles to conform to the designated tolerances 2.6 Establish survey benchmarks
3. Construct retaining wall	3.1 Assemble or install retaining wall components in accordance to plans and specifications 3.2 Install appropriate drainage in accordance with plans and specifications 3.3 Use tools and equipment safely and in accordance with enterprise safe operating procedures and work health and safety requirements
4. Check quality of work and clean-up site	4.1 Inspect the quality of finished works to ensure the required standard has been achieved 4.2 Clean paved surfaces and dispose of all debris in an environmentally safe and sensitive manner 4.3 Clean, maintain and store tools and equipment

Foundation Skills

Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Unit Mapping Information

This unit is equivalent to AHCLSC307A Implement a retaining wall project.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCLSC307 Implement a retaining wall project

Modification History

Release Number	TP Version	Comments
1	AHCv1.0	Initial release

Performance Evidence

The candidate must be assessed on their ability to integrate and apply the performance requirements of this unit in a workplace setting. Performance must be demonstrated consistently over time and in a suitable range of contexts.

The candidate must provide evidence that they can:

- read and interpret documentation associated with retaining wall projects
- calculate material and resource requirements
- establish survey benchmarks
- excavate and profile soil levels
- use tools and equipment to construct retaining wall projects

Knowledge Evidence

The candidate must demonstrate knowledge of:

- the principles and practices of retaining walls
- environmental impacts of landscape works
- landscape retaining wall materials and construction techniques
- legislative requirements and codes of practice affected by landscape works
- local council permit requirements for landscape works
- materials, equipment and machinery that may be required for the project
- methods and practices for maintaining and repairing retaining walls
- set out techniques
- work health and safety issues

Assessment Conditions

Assessors must satisfy current standards for RTOs.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

AURVTP109 Apply vehicle body film wrapping

Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Application

This unit describes the skills and knowledge required to prepare vehicle body surfaces and apply vinyl film wrapping materials. This unit involves preparing for the task, selecting and using specialist tools, selecting vinyl film materials, checking vinyl film quality, and completing workplace processes and documentation.

The unit applies to those working in the automotive paint refinishing repair industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Vehicle Body Technical - Paint

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to apply vehicle body film wrapping	1.1 Determine job requirements from workplace instructions 1.2 Access and interpret workplace procedures and vinyl film supplier recommended application methods 1.3 Select and inspect vinyl film wrapping materials for quality 1.4 Identify hazards associated with the work and manage risks 1.5 Select and check tools and equipment for serviceability 1.6 Assess vehicle panel surface for quality 1.7 Plan work to apply body film wrapping, minimise waste, and prevent damage to vehicle
2. Measure, cut and apply	2.1 Measure surface area and produce patterns

ELEMENTS	PERFORMANCE CRITERIA
vinyl film	2.2 Cut vinyl film material according to vinyl pattern specifications and safety and environmental requirements 2.3 Prepare body surface using vinyl film supplier approved methods, materials and equipment 2.4 Apply vinyl film wrapping materials according to vinyl film supplier specifications and workplace procedures, and without causing damage to body surface
3. Complete work processes	3.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for use 3.2 Clear work area and dispose of or recycle materials according to workplace procedures 3.3 Complete documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Learning	<ul style="list-style-type: none"> Locates required sources of information efficiently.
Numeracy	<ul style="list-style-type: none"> Uses basic mathematical operations, including addition, subtraction, multiplication and division to: <ul style="list-style-type: none"> measure surface areas and vinyl film patterns Calculates vinyl film wrapping material requirements.
Oral communication	<ul style="list-style-type: none"> Clarifies instructions and procedures Reports quality issues and job outcomes clearly.
Technology	<ul style="list-style-type: none"> Uses specialist tools.

Unit Mapping Information

Supersedes and is equivalent to AURVTP009 Apply vehicle body film wrapping.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURVTP109 Apply vehicle body film wrapping

Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- apply vinyl film wrapping on at least three different vehicles.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to apply vehicle body film wrapping, including:
 - information provided by customer and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to apply vehicle body film wrapping, including:
 - establishing serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment
 - disposal of excess materials
 - recycling procedures
- work health and safety (WHS) requirements relating to applying vehicle body film wrapping, including procedures for:
 - selecting and using personal protective equipment (PPE)
 - using specialist tools
- environmental requirements, including procedures for trapping, storing and disposing of waste material

- types and uses of vinyl film wrapping materials and tools, including:
 - vinyl film wrapping requirements
 - patterns
 - application tools
 - cleaning agents
- vinyl film supplier recommended methods and techniques for applying vinyl film wrapping, including:
 - surface preparation
 - surface measurements and pattern development
 - quality requirements relating to vinyl film wrapping
- procedures for protecting vehicle and components when applying film wrapping
- procedures for final inspection of vehicle vinyl film wrapping.

Assessment Conditions

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of task.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the body film wrapping they have applied to vehicles, e.g. work orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace or simulated workplace
- workplace instructions
- PPE to apply vinyl film wrapping
- vinyl film supplier specifications and application methods
- three different vehicles requiring the application of vinyl film materials
- vinyl film wrapping material
- tools, equipment and materials appropriate for applying vehicle body film wrapping.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

BSBAUD513 Report on quality audits

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to report on the outcomes of quality audits and take appropriate follow up actions. It covers compiling audit results, preparing reports for relevant stakeholders, and negotiating follow up actions with relevant stakeholders.

The unit applies to individuals who have an established knowledge of quality auditing and are proficient in using a range of quality auditing techniques. It addresses the function performed by either an auditor having sole responsibility for the audit or an auditor required to report on quality audits as part of a quality audit team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical Skills – Audit and Compliance

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to report audit results	1.1 Compile audit results 1.2 Analyse compiled audit results against agreed audit plan and identify non-compliances 1.3 Consult with team members, if required
2. Prepare final audit report	2.1 Produce draft audit report according to audit plan 2.2 Provide draft report to relevant stakeholders and seek feedback 2.3 Finalise audit report, integrating stakeholder feedback, as required 2.4 Present final audit report to auditee and other relevant

ELEMENT	PERFORMANCE CRITERIA
	stakeholders
3. Agree on follow up process with auditee	<p>3.1 Determine timeframes for any corrective action required to deal with non-conformance, in consultation relevant stakeholders, including the auditee</p> <p>3.2 Confirm corrective action follow-up procedures are agreed with relevant stakeholders</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Interprets and analyses information from a complex range of organisational documentation
Writing	<ul style="list-style-type: none"> Develops a variety of complex documents using relevant structure, tone and vocabulary appropriate to audience, context and purpose
Oral Communication	<ul style="list-style-type: none"> Participates in spoken exchanges using clear language, tone and pace Uses questioning and listening techniques to clarify understanding
Numeracy	<ul style="list-style-type: none"> Collects, represents, summarises and interprets a range of statistical data
Self-management	<ul style="list-style-type: none"> Monitors adherence to organisational policy/ies and procedure/s Organises, plans and sequences own workload according to timelines and organisational requirements Analyses outcomes of decisions to identify opportunities for improvement
Teamwork	<ul style="list-style-type: none"> Collaborates with others to negotiate joint outcomes, playing an active role in facilitating team understanding
Problem solving	<ul style="list-style-type: none"> Recognises a range of familiar problems, their symptoms and causes, actively looking for suitable corrective actions
Initiative and enterprise	<ul style="list-style-type: none"> Makes a range of decisions in complex situations, taking a range of factors into account
Technology	<ul style="list-style-type: none"> Uses digital tools and systems to develop reports in an effective way

Unit Mapping Information

Supersedes and is equivalent to BSBAUD504 Report on a quality audit.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBAUD513 Report on quality audits

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- interpret audit results and produce a detailed audit report containing detailed analysis according to specified organisational requirements on at least two different occasions.

In the course of the above, the candidate must:

- negotiate follow-up actions with relevant stakeholders
- use terminology relating to quality auditing.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- quality auditing principles, methods and techniques
- requirements of auditing regulations
- key features of technology required for producing quality auditing results and reports according to organisational requirements
- presentation of corrective action requirements.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- workplace documentation including quality audit reports, checklists, and audit plans
- technology required for quality auditing reporting.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBCMM411 Make presentations

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit covers the skills and knowledge required to prepare, deliver and review presentations for target audiences.

This unit applies to individuals who may be expected to make presentations for a range of purposes, such as marketing, training and promotions. They contribute well developed communication skills in presenting a range of concepts and ideas.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Social Competence – Verbal Communication

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare presentation	1.1 Plan presentation approach and intended outcomes 1.2 Identify target audience, location and resources requirements 1.3 Select presentation strategies, format and delivery methods according to presentation requirements 1.4 Select techniques to evaluate presentation effectiveness
2. Deliver presentation	2.1 Summarise key concepts and ideas and present to target audience 2.2 Provide opportunity for audience to seek clarification on presentation information 2.3 Confirm target audience understand key concepts and ideas, and

ELEMENT	PERFORMANCE CRITERIA
	that identified presentation objectives have been achieved
3. Review presentation	3.1 Evaluate effectiveness of the presentation 3.2 Seek and discuss feedback and any reactions to the presentation from participants and relevant stakeholders 3.3 Make changes to presentation based on feedback received

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Reviews and analyses documents to identify information relevant to a specific presentation
Writing	<ul style="list-style-type: none"> Develops material to convey ideas and information to target audience in an engaging way
Oral Communication	<ul style="list-style-type: none"> Presents information using words and non-verbal features appropriate to the audience and context Uses listening and questioning techniques to gather information required to develop and modify presentations
Problem solving	<ul style="list-style-type: none"> Interprets audience reactions and changes words and non-verbal features accordingly
Planning and organising	<ul style="list-style-type: none"> Demonstrates sophisticated control over oral, visual and written formats, drawing on a range of communication practices to achieve goals
Initiative and enterprise	<ul style="list-style-type: none"> Selects and uses appropriate conventions and protocols to encourage interaction and to present information Recognises the need to alter personal communication style in response to the needs and expectations of others
Self-management	<ul style="list-style-type: none"> Takes responsibility for planning, sequencing and prioritising tasks and own workload to achieve outcomes
Technology	<ul style="list-style-type: none"> Uses the main features and functions of digital tools to complete work tasks

Unit Mapping Information

Supersedes and is equivalent to BSBCMM401 Make a presentation.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBCMM411 Make presentations

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- prepare and deliver at least two different presentations.

In the course of the above, the candidate must:

- use aids and materials to support the presentation
- select and implement methods to review the effectiveness of presentation and document suggested improvements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- information collection methods that support review and feedback of presentations
- organisational and legislative obligations and requirements relevant to presentations
- structure of presentations according to intended outcomes
- principles of effective communication including:
 - persuasive communication techniques
 - verbal and non-verbal communication
- presentation methods
- different aids, materials and techniques that can be used for presentations.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- equipment, materials and business software packages for making a presentation.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBESB301 Investigate business opportunities

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to identify a business opportunity and its key components. This requires undertaking research to determine the viability of the opportunity, with reference to the legislative frameworks affecting the business.

The unit applies to those establishing or operating a business providing self-employment, as well as those establishing a new venture as part of a larger organisation. The business opportunities may relate to products and/or services offered by the business.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Entrepreneurship and Small Business

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify potential opportunities for business	1.1 Source and analyse market information for potential opportunities 1.2 Analyse information and list details of business ideas and opportunities 1.3 Identify and describe products and/or services that match business ideas 1.4 Identify and analyse available business, financial, digital technology and technical factors related to the potential opportunities 1.5 Identify customers for the products and/or services

ELEMENT	PERFORMANCE CRITERIA
2. Investigate market needs and factors affecting market	<p>2.1 Collect, investigate and analyse business and market information, trends and developments from primary and secondary sources to identify market needs related to business opportunities</p> <p>2.2 Identify ethical and cultural requirements of the market</p> <p>2.3 Identify projected changes in population, economic activity and other macro external factors that may impact business opportunities</p> <p>2.4 Review identified needs and factors and identify their potential impact on business opportunities</p> <p>2.5 Investigate marketing and promotion activities and strategies for identified products and/or services</p>
3. Finalise investigation into business opportunities	<p>3.1 Review personal factors against business opportunities and identify their impact on opportunities</p> <p>3.2 Examine options to address and minimise negative impact and strengthen positive impact of personal factors</p> <p>3.3 Document outcomes of investigation into business opportunity</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Analyses and evaluates information and integrates facts and ideas
Writing	<ul style="list-style-type: none"> Uses information and industry-related terminology to develop required documentation
Numeracy	<ul style="list-style-type: none"> Extracts, evaluates and compares numerical information to determine resources and identify trends
Technology	<ul style="list-style-type: none"> Uses a range of digitally based technology and applications to access and filter data, and then extract, organise and integrate relevant information

Unit Mapping Information

No equivalent unit. Supersedes but is not equivalent to:

- BSBSMB201 Identify suitability for micro business

- BSBSMB301 Investigate micro business opportunities
- BSBSMB306 Plan a home based business.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBESB301 Investigate business opportunities

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- identify and investigate at least one business opportunity and assess the probability of success.

In the course of the above, the candidate must:

- research and analyse information from a range of sources for its potential impact on the market, products and/or services, and customers
- match personal factors to business opportunities.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- sources of business and market information on business ideas and potential business opportunities, including:
 - potential clients and past leads
 - competitor activities, products and services
 - industry trends and insights
 - legislative and regulatory requirements relevant to opportunities being investigated
- market information, trends and developments, including:
 - new and emerging markets and their features
 - expected market growth or decline and associated risk factors
 - economic activity, including projected or potential movements in prices
 - projected changes in availability of resources
- personal factors involved in choosing preferred opportunity include:
 - own skills and aspirations
 - own commitments, expectations and capabilities

- criteria for determining the viability of a business opportunity, including:
 - market size, potential, needs and trends
 - financial considerations
 - benefits and challenges of digital technologies relevant to opportunities
 - resource availability
- business research methods and data collection tools and software
- impact of ethical and cultural requirements of market on opportunities and products.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- internet access for research
- source of information on potential business opportunities, including customer or supplier information
- data collection tools and software
- legislative and regulatory information relating to business opportunities
- workplace documentation and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBESB303 Organise finances for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to estimate start-up costs, financial viability and projected cash flow and budget for a new business venture. It involves assessing the need to access required finances based on calculations and estimates undertaken.

The unit applies to those establishing a business providing self-employment, as well as those establishing a new venture as part of a larger organisation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Entrepreneurship and Small Business

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to organise finances for new business venture	1.1 Establish current financial situation, showing funds available and commitments already incurred 1.2 Identify equity finance and assets from available sources 1.3 Identify business mix and forecast expected business activity over a year
2. Determine required finances for new business venture	2.1 Estimate start-up costs for business venture according to established business activities 2.2 Estimate income and expenses for first year of operation 2.3 Project cash flow for first year of operation 2.4 Seek specialist financial advice as required according to

ELEMENT	PERFORMANCE CRITERIA
	workplace procedures 2.5 Record cash flow and budget and required finances
3. Plan to access finances for new business venture	3.1 Investigate and source suitable types of finances 3.2 Establish methods of accessing finances and servicing any repayment schedule 3.3 Complete required documentation

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Gathers, interprets and analyses a variety of textual information from a range of sources and identifies relevant and key information
Writing	<ul style="list-style-type: none"> Uses information and industry-related terminology to complete required workplace documentation
Oral Communication	<ul style="list-style-type: none"> Uses listening and questioning techniques to seek information and confirm understanding
Numeracy	<ul style="list-style-type: none"> Analyses numerical information to complete required calculations and estimates
Initiative and enterprise	<ul style="list-style-type: none"> Seeks input and expert advice when decisions involve unfamiliar issues Determines priorities and sequences steps involved in clearly defined familiar tasks, and identifies and assembles resources required
Technology	<ul style="list-style-type: none"> Uses main features and functions of digital tools to complete work tasks and access information

Unit Mapping Information

Supersedes and is equivalent to BSBSMB303 Organise finances for the micro business.

Links

Companion Volume Implementation Guide is found on VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBESB303 Organise finances for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- organise finances for at least one new business venture.

In the course of the above, the candidate must:

- investigate financial position, commitments and needs
- determine projected cash flow and budget for business venture
- estimate finances needed to establish and operate the business venture.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- sources of specialist financial advice relating to new business ventures, including Australian Taxation office (ATO)
- accounting software for use in the business venture described in performance evidence
- key financial terminology relevant to new business ventures
- relationship between finances and sales and marketing strategies
- workplace procedures for:
 - costing or pricing and preparing financial forecasts
 - estimating start-up costs, including cost of expenses and assets
 - seeking specialist financial advice
- income and costs to be considered when estimating operating budget, including:
 - monthly variable and fixed costs required for business activity
 - drawings needed for business venture to be financially viable
 - monthly income generated by business venture based on price per unit item or hourly charge rate for labour
 - goods and services tax

- operating finance required for business.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- business technology, including internet access
- finance documentation and resources relating to business described in performance evidence
- sources of specialist advice.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBESB305 Address compliance requirements for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to source advice and specialist services to assist in addressing business compliance relating to regulatory, taxation and insurance requirements.

The unit applies to those establishing a business providing self-employment, as well as those establishing a new venture as part of a larger organisation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Entrepreneurship and Small Business

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Research compliance requirements of new business venture	1.1 Identify regulatory, taxation and insurance requirements relevant to new business venture 1.2 Access information that assists in interpreting and explaining identified compliance requirements 1.3 Research relationships between legislation, regulations, codes of practice, associated standards and accessed information to determine compliance requirements of the business venture
2. Seek specialist advice on compliance and risk minimisation	2.1 Identify sources of specialist advice and services relevant to identified compliance requirements and business venture profile 2.2 Select and access identified specialist advice and services

ELEMENT	PERFORMANCE CRITERIA
	<p>according to business needs, available resources, and workplace procedures</p> <p>2.3 Clarify and confirm compliance requirements and their appropriateness for business, and risk minimisation needs with advisors</p> <p>2.4 Review and document advice and procedures</p>
3. Take action to support business compliance	<p>3.1 Arrange insurance cover for the business according to business needs, available resources, and workplace procedures</p> <p>3.2 Implement compliance procedures according to specialist advice received</p> <p>3.3 Seek feedback on implemented compliance procedures from required personnel</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Identifies and interprets legislative and regulatory information relevant to business requirements
Oral communication	<ul style="list-style-type: none"> Articulates clearly using specific and relevant language suitable to audience to convey requirements, and listening and questioning techniques to confirm understanding
Numeracy	<ul style="list-style-type: none"> Analyses numerical information to calculate specific business requirements Uses formal and informal mathematical language to discuss compliance
Self-management	<ul style="list-style-type: none"> Takes some personal responsibility for ensuring business compliance with legal and regulatory requirements
Planning and organising	<ul style="list-style-type: none"> Plans routine tasks with goals and outcomes, taking some responsibility for decisions regarding sequencing and timing Determines priorities and sequences steps involved in clearly defined tasks, and identifies and assembles resources required

Unit Mapping Information

Supersedes and is equivalent to BSBSMB305 Comply with regulatory, taxation and insurance requirements for the micro business.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBESB305 Address compliance requirements for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- implement procedures to address at least two different compliance requirements for a business or new business venture.

In the course of the above, the candidate must:

- identify, select and access sources of advice on compliance and risk minimisation procedures
- identify regulatory, taxation and insurance compliance requirements, and risk minimisation needs.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- regulatory, taxation and insurance compliance information, and specialist advice and services in relation to operation of new business ventures, including:
 - industry codes of practice and standards
 - registration and licensing
 - work health and safety (WHS) requirements and responsibilities
 - required insurances
- workplace procedures that support compliance of new business venture, including for:
 - selecting and accessing specialist advice and services
 - arranging business insurance cover
- key components of compliance procedures:
 - following taxation and industrial relations principles
 - updating and maintaining legal documents
 - investigating areas of non-compliance

- monitoring provision of products and/or services
- taking corrective action where necessary.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- business technology, including internet access for research
- legislation, regulations, codes of practice and standards relating to compliance requirements described in performance evidence
- workplace procedures and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBESB402 Establish legal and risk management requirements of new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to identify and comply with legal and risk management requirements of the business or new business venture, including negotiating, creating and planning for legal contracts used within the business, where required.

The unit applies to those establishing a business providing self-employment, as well as those establishing a new venture as part of a larger organisation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Entrepreneurship and Small Business

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify legal and risk management requirements relating to business	1.1 Identify legal structure of business using reliable sources 1.2 Identify legislative and regulatory requirements applicable to identified legal structure 1.3 Analyse identified requirements and their relationship to business and workplace practices and processes
2. Implement procedures and processes to comply with legislative and regulatory	2.1 Develop and implement procedures to ensure compliance with relevant legislative and regulatory requirements 2.2 Develop and implement processes and procedures for storing and maintaining legal documents and business records 2.3 Establish systems to identify areas of non-compliance and take

ELEMENT	PERFORMANCE CRITERIA
requirements	corrective action where necessary
3. Negotiate and arrange contracts	3.1 Assess products and/or services to determine procurement rights and ensure protection of business interests 3.2 Negotiate and secure contractual procurement rights for goods and/or services as required and according to business plan and workplace procedures 3.3 Complete any contractual arrangements according to workplace procedures and business plan 3.4 Seek legal advice if required to confirm contractual rights and obligations
4. Mitigate business risks	4.1 Analyse business activities and identify applicable risk management requirements 4.2 Assess probability and impact of identified internal and external risks to business 4.3 Develop a plan to prioritise and treat risks 4.4 Implement procedures to mitigate risks according to risk treatment plan

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Learning	<ul style="list-style-type: none"> Accesses information to maintain up-to-date information on legal and risk management requirements
Reading	<ul style="list-style-type: none"> Identifies, analyses and evaluates a range of complex text to determine legislative, regulatory and related business requirements
Writing	<ul style="list-style-type: none"> Prepares written plans and workplace documentation that communicate information clearly and effectively
Oral communication	<ul style="list-style-type: none"> Uses specific and relevant language to clearly articulate legal issues, and uses questioning and listening techniques to clarify solutions Participates in verbal negotiations using tone and language suitable to audience
Numeracy	<ul style="list-style-type: none"> Reviews, analyses and contrasts numerical data which may be embedded in documents
Self-management	<ul style="list-style-type: none"> Monitors adherence to workplace procedures and legislative requirements
Planning and	<ul style="list-style-type: none"> Implements actions as per plans and makes adjustments if necessary

Skill	Description
organising	and addressing unexpected issues

Unit Mapping Information

Supersedes and is equivalent to BSBSMB401 Establish legal and risk management requirements of small business.

Supersedes but is not equivalent to:

- BSBIPR405 Protect and use intangible assets in small business
- BSBSMB410 Review and implement energy efficiency in business operations.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBESB402 Establish legal and risk management requirements of new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- establish legal and risk management requirements for at least one business or new business venture, and implement procedures for meeting them
- create at least one contract with a supplier of goods or services to business or new business venture
- identify, assess and treat at least three different risks specific to business or new business venture and prioritise risks with highest probability of occurrence and greatest negative impact.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislative and regulatory requirements relating to operation of new business ventures, including:
 - consumer legislation
 - environmental requirements and responsibilities
 - registration and licensing
 - industry codes of practice and standards
 - work health and safety (WHS) requirements and responsibilities
 - insurance products and requirements, including adequate coverage
- workplace procedures for:
 - negotiating, creating and terminating contractual arrangements, including seeking legal advice
 - investigating and securing procurement rights relating to products and/or services
 - identifying options for leasing or owning business premises
- legal rights and obligations of alternative ownership structures

- key features of workplace record-keeping processes and procedures that:
 - meet minimum legal and taxation requirements
 - maintain records in a secure and accessible manner
- key components of compliance procedures:
 - following taxation and industrial relations principles and requirements
 - updating and maintaining legal documents
 - investigating areas of non-compliance
 - monitoring provision of products and/or services
 - taking corrective action where necessary
- key steps in risk management process, including procedures for developing and implementing business risk treatment plan.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- business technology, including internet access
- legislation, regulations, codes of practice and standards relating to business described in performance evidence
- workplace documentation and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBESB403 Plan finances for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to identify financial requirements of a business, including profit targets, cash flow projections and strategies to garner financial support.

The unit applies to those establishing a business providing self-employment, as well as those establishing a new venture as part of a larger organisation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Entrepreneurship and Small Business

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to plan finances	1.1 Identify costs associated with production and delivery of business products and/or services 1.2 Set profit targets according to business venture requirements and workplace procedures 1.3 Calculate prices based on costs and profit targets, as a charge-out rate for labour or unit price for products and/or services 1.4 Calculate break-even sales point to assess viability of business venture 1.5 Evaluate and select pricing strategies in relation to market conditions to meet profit targets and according to workplace

ELEMENT	PERFORMANCE CRITERIA
	<p>procedures</p> <p>1.6 Prepare projected profit statement to supplement business plan</p>
2. Develop a financial plan	<p>2.1 Identify working capital requirements necessary to attain profit projections</p> <p>2.2 Identify non-current asset requirements and consider alternative asset management strategies</p> <p>2.3 Prepare cash flow projections to enable business operation according to business plan and legal requirements</p> <p>2.4 Identify capital investment requirements accurately for each operational period</p> <p>2.5 Select budget targets to enable ongoing monitoring of financial performance</p>
3. Plan to acquire finance	<p>3.1 Identify start-up and ongoing financial requirements according to financial plan and budget</p> <p>3.2 Identify sources of finance for required liquidity according to business goals and objectives and workplace procedures</p> <p>3.3 Research and assess cost of securing finance on optimal terms</p> <p>3.4 Develop strategies to obtain finance as required to ensure financial viability of business venture</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Identifies, analyses and evaluates complex information from a range of sources
Writing	<ul style="list-style-type: none"> Prepares written plans and workplace documentation that communicate information clearly and effectively
Numeracy	<ul style="list-style-type: none"> Analyses numerical information to determine costs, prices, profit and losses, and other financial data
Self-management	<ul style="list-style-type: none"> Identifies implications of legal and regulatory responsibilities for own work Takes a range of constraints into account and adjusts, if necessary

Unit Mapping Information

Supersedes and is equivalent to BSBSMB402 Plan small business finances.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBESB403 Plan finances for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- develop at least one financial plan that addresses financial requirements of a business or new business venture, including cash flow projections and a projected profit statement.

In the course of the above, the candidate must demonstrate that the plan:

- reflects legal requirements applicable to business
- includes strategies to monitor financial performance of business.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislative and regulatory requirements relating to business described in performance evidence
- process for conducting break-even analyses
- workplace procedures for:
 - costing for the business, including margin or mark-up, charge-out rates and unit costs
 - setting profit targets
 - identifying sources and investigating costs of securing appropriate financial assistance
- methods and relative costs of obtaining finance
- principles and procedures for preparing:
 - balance sheets
 - cash flow forecasts
 - profit and loss statements
 - financial plans
- purpose of financial reports
- accounting terminology required when planning finances for new business ventures

- methods for analysing working capital cycles.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- software for financial calculations
- legislation and regulations relating to business described in performance evidence
- workplace documentation and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBESB406 Establish operational strategies and procedures for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to develop and implement operational strategies and procedures for new businesses.

The unit applies to those establishing a business providing self-employment, as well as those establishing a new venture as part of a larger organisation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Entrepreneurship and Small Business

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Review operational strategies and procedures for business or new business venture	1.1 Develop a detailed operational plan that sets out clear action points to fulfil on business goals and objectives 1.2 Identify work health and safety (WHS) and environmental issues and implement strategies to minimise risk factors 1.3 Review and evaluate, where appropriate, a quality assurance process for the business in line with industry standards, compliance requirements and cultural criteria 1.4 Develop operational key performance indicators (KPIs) that align to business plan 1.5 Align KPIs to business strategies, including utilisation of existing or new technologies, where practicable, to optimise

ELEMENT	PERFORMANCE CRITERIA
	business performance
2. Implement developed operational strategies and procedures	2.1 Implement systems to evaluate business performance and customer satisfaction, including by setting KPIs or targets 2.2 Implement systems to control stock, expenditure or cost, wastage or shrinkage and risks to health and safety according to business plan, incorporating new digital technologies where applicable 2.3 Identify and manage staffing requirements, considering a range of permanent and flexible arrangements, and adhering to budgetary constraints 2.4 Provide products and/or services according to established legal, ethical cultural and technical standards 2.5 Provide products and/or services according to time, cost and quality specifications, and customer requirements, incorporating new digital technologies where applicable 2.6 Apply quality procedures to address product and/or service and customer requirements
3. Evaluate business performance	3.1 Use digital technologies to regularly evaluate and review achievement of operational targets to ensure optimum business performance, according to business goals and objectives 3.2 Review and document systems and structures to support business performance 3.3 Investigate and analyse operating problems to establish causes and implement changes as required, as part of business quality system 3.4 Update operational policies and procedures to incorporate corrective action
4. Review business operations	4.1 Review and adjust business operations to increase business success, according to business goals and objectives 4.2 Research and implement new and emerging digital technologies into business operations according to business goals and objectives and workplace procedures 4.3 Research new business opportunities and adjust business goals and objectives as new opportunities arise

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Evaluates complex text to determine legislative, regulatory and workplace documentation
Writing	<ul style="list-style-type: none"> Prepares written reports and workplace documentation that communicate information clearly and effectively
Numeracy	<ul style="list-style-type: none"> Interprets numerical information to manage performance information and regulate cash flow
Self-management	<ul style="list-style-type: none"> Evaluates adherence to workplace policies and procedures and considers own role for its contribution to broader goals of work environment Identifies implications of legal and regulatory responsibilities for own work, with specific reference to safety Identifies concepts, principles and features of approaches in use in other contexts and applies them to own situation
Planning and organising	<ul style="list-style-type: none"> Develops plans to manage relatively complex, non-routine tasks that may contribute to longer-term operational and strategic goals

Unit Mapping Information

Supersedes and is equivalent to BSBSMB420 Evaluate and develop small business operations.

Supersedes but is not equivalent to:

- BSBFRA401 Manage compliance with franchisee obligations and legislative requirements
- BSBFRA402 Establish a franchise
- BSBFRA403 Manage relationship with franchisor
- BSBFRA404 Manage a multiple-site franchise
- BSBFRA501 Establish a franchise operation
- BSBFRA502 Manage a franchise operation
- BSBFRA503 Manage establishment of new sites or regions
- BSBFRA504 Manage relationships with franchisees
- BSBFRA505 Manage closure of a franchise
- BSBIPR501 Manage intellectual property to protect and grow business
- BSBSMB423 Create a digital technology plan for small business.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBESB406 Establish operational strategies and procedures for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- develop strategies and procedures to manage operations for at least one new business or new business venture, including:
 - an operational plan
 - risk management procedures
 - a quality assurance process
 - performance measures.

In the course of the above, the candidate must:

- use existing, new and emerging digital technologies to optimise business performance
- research and record business improvements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislation, regulations, industry codes of practice and standards specific to small business described in performance evidence
- key features of methods for implementing operation and revenue control systems, including for controlling stock and expenditure
- methods for evaluating performance and implementing improvements, including:
 - identifying and meeting staffing requirements
 - analysing and correcting business problems
 - reviewing and adjusting the business plan
- work health and safety (WHS) responsibilities and procedures for managing hazards and assessing risks associated with business described in performance evidence
- principles of risk management, including risk assessment

- quality assurance system principles and methods
- role of digital technologies and innovation in modern business
- key features of systems to manage staff, stock, expenditure, services and customer service
- key features of required technical or specialist skills relevant to business operations
- workplace procedures for implementing new and emerging digital technologies into business operations.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- business equipment and resources, including business technology
- legislation, regulations, codes of practice and standards relating to business described in performance evidence
- workplace documentation and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

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BSBESB407 Manage finances for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to implement and review financial management strategies, including by using new and emerging digital technologies and interpreting financial reports and other numerical data.

The unit applies to those establishing a business providing self-employment, as well as those establishing a new venture as part of a larger organisation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Entrepreneurship and Small Business

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Implement financial strategy	1.1 Identify financial information requirements and obtain specialist services, as required 1.2 Produce financial budgets or projections for each forward period, and distribute to required people according to legal requirements and workplace procedures 1.3 Develop a plan to negotiate and manage business capital to best enable implementation of the business plan 1.4 Develop and maintain strategies and enable adequate financial provision for taxation according to legal requirements 1.5 Develop, monitor and maintain client credit policies to maximise cash flow

ELEMENT	PERFORMANCE CRITERIA
	<p>1.6 Select key performance indicators (KPIs) to enable ongoing monitoring of financial performance in line with business plan</p> <p>1.7 Record and communicate financial procedures to required personnel to facilitate implementation of business plan according to workplace procedures</p>
2. Monitor financial performance	<p>2.1 Use available systems to monitor and report on financial performance targets, and analyse data to establish extent to which financial goals have been met</p> <p>2.2 Monitor marketing and operational strategies for their effects on financial goals</p> <p>2.3 Calculate and evaluate financial ratios according to own business and/or industry benchmarks</p>
3. Review financial performance	<p>3.1 Assess financial strategy to determine whether variations or alternative plans are needed according to workplace procedures, and change as required</p> <p>3.2 Research and implement, with relevant personnel, new and emerging digital technologies to boost business profitability according to business plan</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Evaluates complex text to determine legislative, regulatory and workplace documentation
Writing	<ul style="list-style-type: none"> Prepares written reports and workplace documentation that communicate complex information clearly and effectively
Oral communication	<ul style="list-style-type: none"> Articulates clearly using specific and relevant language suitable to audience to convey requirements, and employs listening and questioning techniques to confirm understanding
Numeracy	<ul style="list-style-type: none"> Interprets numerical information to calculate required financial information
Self-management	<ul style="list-style-type: none"> Identifies implications of legal and regulatory responsibilities for own work Selects appropriate form, channel and mode of communication for a specific purpose relevant to own role
Initiative and	<ul style="list-style-type: none"> Uses formal and informal processes to monitor implementation of ideas and analyse outcomes

Skill	Description
enterprise	
Planning and organising	<ul style="list-style-type: none">• Develops plans to manage relatively complex, non-routine tasks that may contribute to longer-term operational and strategic goals

Unit Mapping Information

Supersedes and is equivalent to BSBSMB421 Manage small business finances.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBESB407 Manage finances for new business ventures

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- implement a financial strategy for at least one business or new business venture according to business plan and goals.

In the course of the above, the candidate must:

- adhere to legal requirements
- produce financial projections, including cash flow estimates
- develop a plan to negotiate and manage business assets and financial capital
- define strategies for debt collection and contingencies for debtors
- manage cash flow
- define key indicators for financial performance
- communicate with required people
- seek specialist services, where required
- monitor the financial performance of the business and make changes to strategy as required
- identify opportunities to implement new and emerging digital technologies to support the financial management of the business.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislative and regulatory financial requirements that apply to new business venture described in performance evidence
- key purposes of financial reports
- components of financial budgets or projections, including cash flow estimates
- workplace procedures for:
 - recording and communicating financial procedures to required personnel

- distributing financial budgets and projections
- using digital technologies to monitor and report on financial performance targets and analyse data
- assessing and changing financial plan
- forms, channels and modes of communication used in relation to managing business finances
- key features of business and industry benchmarking used to evaluate financial ratios
- key features of financial decision-making relevant to the business, including:
 - strategies that enable adequate financial provision for taxation
- components of client credit policies, including contingencies for debtors in default
- key features of significant financial indicators
- key features of balance sheet preparation and interpretation
- key features of debt collection procedures and strategies
- key features of profit and loss statement preparation and interpretation
- key features of stock records and stock control relevant to the business.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- business equipment and resources, including business technology
- legislation, regulations, codes of practice and standards relating to business described in performance evidence
- workplace documentation and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBHRM415 Coordinate recruitment and onboarding

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to develop and implement strategies to source candidates and to assess their suitability for available positions.

The unit applies to individuals working in a human resources job role, as well as those for whom recruitment and onboarding are part of their broader duties.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical Skills – Human Resources

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan for recruitment	1.1 Establish recruitment requirements and authority to fill position 1.2 Consult with relevant stakeholders about job descriptions, selection criteria and workforce strategy 1.3 Contribute to development of job descriptions that accurately reflect the role requirements according to relevant policies, procedures and legislative requirements 1.4 Implement strategies to assist in sourcing candidates according to organisational policies and procedures
2. Screen and interview potential candidates	2.1 Conduct preliminary screening with candidates according to legislative requirements 2.2 Organise and conduct interviews and selection activities according to organisational policies and procedures

ELEMENT	PERFORMANCE CRITERIA
	2.3 Carry out skills assessment relevant to the position 2.4 Obtain relevant additional information from candidates
3. Assess and select candidates	3.1 Consult with relevant stakeholders to conduct assessment and selection process according to organisational policy and legislative requirements 3.2 Assess candidates against specified selection criteria and referee reports 3.3 Prepare recommendations for relevant stakeholders and document according to organisational procedures
4. Manage candidate outcomes	4.1 Inform all candidates of selection decisions 4.2 Provide feedback to candidates according to organisational policies and procedures 4.3 Secure preferred candidate's agreement 4.4 Coordinate necessary documentation according to organisational procedures, observing confidentiality and privacy requirements
5. Onboard successful candidate	5.1 Advise relevant stakeholders of new appointment, including start date 5.2 Make necessary administrative arrangements for pay and employee record keeping 5.3 Coordinate successful candidate's onboarding according to organisational policies and procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Interprets a range of textual information from a variety of sources and analyses and reviews for compliance and suitability
Writing	<ul style="list-style-type: none"> Prepares concise notes to help synthesise information sourced during research Produces reports and other business communication for a range of contexts and audiences using relevant language and structure
Oral Communication	<ul style="list-style-type: none"> Asks questions and listens carefully to gather, interpret or evaluate information Participates in verbal exchanges using clear language and appropriate tone to provide relevant information and feedback

Self-management	<ul style="list-style-type: none"> • Applies workplace protocols, legislation or regulations relevant to own responsibilities • Selects and uses appropriate conventions and protocols when communicating with candidates or clients • Takes responsibility for planning and implementing tasks for efficient and effective outcomes
Teamwork	<ul style="list-style-type: none"> • Participates in conversations relevant to role responding, explaining, negotiating and persuading, as required
Problem solving	<ul style="list-style-type: none"> • Uses systematic, analytical processes to evaluate information and make decisions

Unit Mapping Information

Supersedes and is equivalent to BSBHRM405 Support the recruitment, selection and induction of staff.

Supersedes but is not equivalent to:

- BSBEMS401 Develop and implement business development strategies to expand client base
- BSBEMS402 Develop and implement strategies to source and assess candidates
- BSBEMS403 Develop and provide employment management services to candidates
- BSBEMS404 Manage the recruitment process for client organisations
- BSBSMB417 Recruit staff.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBHRM415 Coordinate recruitment and onboarding

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- coordinate the recruitment and onboarding of two candidates.

In the course of the above, the candidate must:

- demonstrate the process for screening and interviewing a candidate
- communicate effectively with clients and successful and unsuccessful candidates
- review job descriptions and use them to support sourcing, selecting and appointing suitable staff
- consult with relevant stakeholders to gain approvals
- develop selection criteria and interview questions in consultation with relevant stakeholders
- obtain referees' reports
- provide a written report or demonstration of an assessment of a candidate's skills and selection recommendation
- secure preferred candidate's agreement and provide an employment contract.
-

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key provisions of relevant legislation, regulations, standards and codes of practice that affect employment agencies and organisation's recruiting processes
- common interview techniques and recruitment sourcing methods
- common methods of attracting candidates
- methods to assess and report on candidates according to organisational procedures
- strategies to provide feedback to candidates according to organisational procedures.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- workplace policies and procedures relevant to performance evidence
- position descriptions
- legislation, regulations, Codes and Standards relevant to staff recruitment, selection and onboarding.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBLDR413 Lead effective workplace relationships

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills, knowledge and outcomes required to use leadership to promote team cohesion. It includes motivating, mentoring, coaching and developing the team and forming the bridge between the management of the organisation and team members.

The unit applies to team leaders, supervisors and new or emerging managers where leadership plays a role in developing and maintaining effective workplace relationships. It applies in any industry or community context. At this level work will normally be carried out within routine and non-routine methods and procedures, which require planning, evaluation, leadership and guidance of others.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Social Competence – Leadership

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to lead workplace relationships	1.1 Identify work team objectives according to organisational strategy 1.2 Collect and analyse information for the achievement of work task 1.3 Share ideas and information with relevant internal and external stakeholders according to work task 1.4 Develop strategy for completion of work task in collaboration with work team

ELEMENT	PERFORMANCE CRITERIA
2. Lead workplace relationships	2.1 Identify and implement methods to facilitate collaboration to complete work task 2.2 Support colleagues experiencing difficulties fulfilling work requirements 2.3 Manage conflict constructively within the organisation's processes and parameters of own role 2.4 Communicate work progress to relevant internal and external stakeholders
3. Review leadership	3.1 Seek feedback on relationship management for work task from relevant stakeholders 3.2 Analyse feedback on relationship management 3.3 Evaluate personal performance in leading workplace relationships 3.4 Identify areas of improvement for leading workplace relationships future work tasks

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Collects, analyses and evaluates textual information from a range of resources to inform improvement strategies
Oral Communication	<ul style="list-style-type: none"> Selects or adjusts communication style to maintain effectiveness of interaction and build and maintain engagement consistent with organisational requirements
Initiative and enterprise	<ul style="list-style-type: none"> Identifies and follows legislative and organisational requirements relevant to own role
Teamwork	<ul style="list-style-type: none"> Selects and uses appropriate conventions and protocols when communicating with diverse stakeholders Adapts personal communication style to build trust and positive working relationships and to show respect for the opinions, values and particular needs of others Plays a lead role in situations requiring effective collaboration, demonstrating conflict resolution skills and ability to engage and motivate others
Planning and	<ul style="list-style-type: none"> Plans and implements activities and processes to manage and review work performance

organising	<ul style="list-style-type: none">• Systematically gathers and analyses all relevant information to formulate and evaluate possible solutions to difficulties
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Unit Mapping Information

Supersedes and is equivalent to BSBLDR402 Lead effective workplace relationships.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBLDR413 Lead effective workplace relationships

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- lead effective workplace relationships on at least four occasions with different individuals or groups.

In the course of the above, the candidate must:

- access and analyse information required to achieve planned outcomes
- collaborate with work team to develop and implement a work task strategy
- apply techniques for resolving problems and conflicts, and dealing with poor performance according to organisational and legislative requirements
- monitor and communicate work progress to relevant internal and external stakeholders
- seek and review feedback to improve workplace leadership.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- considerations for communicating information including audience cultural and social diversity
- consultation processes including internal and external sources of consultees
- impacts of relationships, cultural and social environment, in supporting or hindering the achievement of planned outcomes
- techniques for developing positive work relationships and building trust and confidence in a team, including:
 - interpersonal styles
 - communications
 - consultation
 - cultural and social sensitivity
 - networking

- impact of legislation and organisational policies on workplace relationships
- techniques for communicating information and ideas to a range of stakeholders
- common methods to resolve workplace conflict
- common methods to manage poor work performance
- common methods to monitor, analyse and improve work relationships.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- legislation, regulations, standards and codes relevant to performance evidence
- workplace documentation and resources
- interaction with others.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
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BSBLDR414 Lead team effectiveness

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills, knowledge and outcomes required to lead the performance of a team and to develop team cohesion.

The unit applies team leaders, supervisors and new emerging managers who have an important leadership role in the development of efficient and effective work teams. Leaders at this level also provide leadership for the team and bridge the gap between the management of the organisation and the team members. As such they must 'manage up' as well as manage their team/s.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Social Competence – Leadership

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan team outcomes	1.1 Lead team to identify and establish team objectives and work processes 1.2 Support team to document identified objectives and work processes according to organisational processes 1.3 Encourage team members to incorporate innovation and productivity measures in work plans 1.4 Lead and support team members to meet expected outcomes
2. Promote team cohesion	2.1 Provide opportunities for input of team members into planning, decision making and operational aspects of work team

ELEMENT	PERFORMANCE CRITERIA
	<p>2.2 Support team members to take responsibility for own work and to assist each other in undertaking required roles and responsibilities</p> <p>2.3 Provide feedback to team members on their efforts and contributions</p> <p>2.4 Address or refer issues, concerns and problems identified by team members</p> <p>2.5 Model expected behaviours and approaches</p>
3. Supervise team performance	<p>3.1 Encourage team members to participate in and take responsibility for team activities and communication processes</p> <p>3.2 Support team to identify and resolve problems which impede performance</p> <p>3.3 Ensure own contribution to work team serves as a role model for others</p>
4. Liaise with management	<p>4.1 Establish open communication with line management</p> <p>4.2 Communicate information from line management to the team</p> <p>4.3 Communicate unresolved issues, concerns and problems raised by the team to line management to action</p> <p>4.4 Communicate issues raised by management to the team to action</p>

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Writing	<ul style="list-style-type: none"> Prepares workplace plans that communicate intent and elicits feedback clearly and effectively
Oral communication	<ul style="list-style-type: none"> Engages in discussions or provides information using structure and language appropriate to the audience and situation
Teamwork	<ul style="list-style-type: none"> Selects and uses appropriate conventions and protocols when communicating with team members Adapts personal communication style to model required behaviours, build trust and positive working relationships and to show respect for the opinions and values of others Plays a lead role in situations requiring effective collaboration, demonstrating conflict resolution skills and ability to engage and motivate others

Planning and organising	<ul style="list-style-type: none">• Develops, implements and monitors plans and processes to ensure team engagement and effectiveness• Uses formal analytical thinking techniques to identify issues and generate possible solutions, seeking input from others, as required
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Unit Mapping Information

Supersedes and is equivalent to BSBLDR403 Lead team effectiveness.

Supersedes but is not equivalent to BSBSMB407 Manage a small team.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBLDR414 Lead team effectiveness

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- develop a team development plan, that addresses:
 - innovation and productivity measures
 - team cohesion
 - issues management and actions.

In the course of the above, the candidate must:

- apply knowledge of organisational goals, objectives and plans to work tasks
- communicate with team members and management to identify and establish team purpose, roles, responsibilities, goals plans and objectives and resolve problems
- consult, encourage, support and provide feedback to team members
- model team leadership behaviours and approaches.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- work processes, including team purpose, roles, responsibilities, goals and plans
- organisational escalation policies and procedures
- behaviours which enhance organisational image for work team, clients and customers
- processes for setting goals that contribute to team effectiveness
- effects of individual behaviour on team effectiveness
- innovation and productivity measures in work plans
- key features of common leadership styles.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- information about the organisation, including organisational structure, goals, objectives and plans.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBMKG623 Develop marketing plans

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to research, develop and present marketing plans for an organisation.

The unit applies to individuals working in senior marketing positions who are responsible for formulating a marketing plan by developing specific marketing strategies and tactics in accordance with the organisation's overall marketing objectives. Individuals operating at this level may receive input from people working under their supervision, who collect information required to devise specific marketing strategies and tactics.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Technical Skills – Marketing

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to write marketing plan	1.1 Research market conditions 1.2 Consult with key stakeholders and seek additional context 1.3 Review any previous marketing plans and marketing performance, where possible 1.4 Collate information for development of marketing plan
2. Write marketing plan	2.1 Develop marketing objectives according to organisational goals and targets 2.2 Develop marketing strategies according to marketing objectives and legal and ethical requirements

ELEMENT	PERFORMANCE CRITERIA
	2.3 Develop budget and timeline according to marketing strategy 2.4 Develop action plan according to marketing strategy and organisational, legal and ethical requirements 2.5 Develop a marketing performance review strategy for the assessment of organisational performance against marketing objectives
3. Finalise marketing plan	3.1 Communicate marketing plan to relevant stakeholders and seek approval within required format and timeframe 3.2 Adjust marketing plan in response to feedback from key stakeholders 3.3 Distribute marketing plan for implementation within required timeframe 3.4 Store marketing plan according to organisational policy and procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Accesses information from a range of sources and accurately analyses and evaluates complex information relating to the marketing process
Writing	<ul style="list-style-type: none"> Uses a range of writing styles to articulate complex concepts and ideas Revises and edits documents based on feedback Uses appropriate formats and grammatical structures to present information logically for different audiences
Oral Communication	<ul style="list-style-type: none"> Uses appropriate language and non-verbal features to explain and present information to a range of personnel Uses active listening and questioning to elicit feedback
Numeracy	<ul style="list-style-type: none"> Analyses and manages complex information relating to timelines, targets and budgets
Self-management	<ul style="list-style-type: none"> Works autonomously making high level decisions to ensure organisational objectives and regulatory requirements are met Understands own legal and ethical rights and responsibilities
Problem solving	<ul style="list-style-type: none"> Uses problem-solving processes to identify key information and issues, evaluate alternative strategies, anticipate consequences and consider implementation issues and contingencies

Skill	Description
Planning and organising	<ul style="list-style-type: none">• Accepts responsibility for planning and sequencing complex tasks and workload to meet timelines

Unit Mapping Information

Supersedes and is equivalent to BSBMKG609 Develop a marketing plan.

Supersedes but is not equivalent to BSBMKG610 Develop, implement and monitor a marketing campaign.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBMKG623 Develop marketing plans

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- develop one marketing plan according to organisational objectives, including:
 - researching information
 - consulting with stakeholders
 - developing marketing objectives, strategies, budget and a marketing performance review strategy according to task requirements
 - seeking approval for marketing plan from relevant stakeholders
 - adjusting and disseminating final marketing plan according to feedback and organisational policy and procedures.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- organisational structure, products and services and strategic and marketing objectives
- components of a marketing plan including:
 - environmental analysis
 - segmentation, target market and positioning
 - market objectives
 - marketing strategy or marketing mix
 - budget
 - implementation plan
 - monitor or evaluation control plan including risk contingency plan
- common marketing opportunities including:
 - strategic alliances and cooperative business models
 - new products or services that target specific markets

- greater market penetration with existing products or services
- take-overs
- new businesses and franchising
- common marketing strategies and marketing approaches
- processes to ensure marketing strategies, approaches and marketing mix align to organisation's objectives and are legal, ethical and achievable
- legislative and regulatory context of the organisation as relevant to the marketing plan.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- legislation, regulations, standards and codes relevant to developing marketing plans
- workplace documentation and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBOPS304 Deliver and monitor a service to customers

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to identify customer needs, deliver and monitor customer service and identify improvements in the provision of customer service.

The unit applies to those who apply a broad range of competencies in various work contexts. In this role, individuals often exercise discretion and judgement using appropriate knowledge of customer service. They provide technical advice and support to customers over short or long-term interactions.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Business Operations

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify customer needs	1.1 Identify and clarify customer needs and expectations 1.2 Evaluate customer needs and determine priorities for service delivery according to organisational requirements 1.3 Inform customers about available choices for meeting their needs and assist selection of preferred options 1.4 Identify limitations in addressing customer needs and seek assistance from designated individuals, where required
2. Deliver a service to customers	2.1 Provide service to meet identified customer needs according to organisational and legislative requirements 2.2 Establish and maintain rapport with customers

ELEMENT	PERFORMANCE CRITERIA
	<p>2.3 Manage customer complaints according to organisational and legislative requirements</p> <p>2.4 Provide assistance and respond to customers with specific needs according to organisational and legislative requirements</p> <p>2.5 Identify and use available opportunities to promote and enhance services and products to customers</p>
3. Evaluate customer service delivery	<p>3.1 Review customer satisfaction with service delivery using verifiable evidence according to organisational and legislative requirements</p> <p>3.2 Seek and respond to customer feedback according to organisational policies and procedures</p> <p>3.3 Identify opportunities to enhance the quality of customer service</p> <p>3.4 Document recommendations for customer service improvements</p> <p>3.5 Submit recommendations to relevant personnel according to organisational policies and procedures</p>

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Description
Learning	<ul style="list-style-type: none"> Identifies and follows up on opportunities to improve work practices and outcomes
Oral communication	<ul style="list-style-type: none"> Provides information or advice using structure and language to suit the audience Asks questions and listens to gain information or confirm understanding
Reading	<ul style="list-style-type: none"> Evaluates textual information to determine customer service requirements Proofreads texts for clarity of meaning and accuracy of grammar and punctuation
Writing	<ul style="list-style-type: none"> Completes responses to customer complaints in required format Prepares reports using sequencing, format and words to communicate recommendations clearly and effectively
Planning and organising	<ul style="list-style-type: none"> Complies with organisational policies and procedures relevant to role Plans and implements systems to gather and organise information

Skill	Description
Problem-solving	<ul style="list-style-type: none"> • Uses problem solving skills to analyse and respond to customer complaints or enquiries
Teamwork	<ul style="list-style-type: none"> • Selects and uses appropriate communication conventions to establish connections, build rapport, seek information and develop professional working relationships • Adjusts personal communication style in response to the opinions, values and particular needs of others

Unit Mapping Information

Supersedes and is equivalent to BSBCUS301 Deliver and monitor a service to customers.

Supersedes but is not equivalent to:

- BSBCUE309 Develop product and service knowledge for customer engagement operation
- BSBEDU303 Assist with the provision of international education information
- BSBINT303 Organise the importing and exporting of goods
- BSBINT304 Assist in the international transfer of services
- BSBSLS407 Identify and plan sales prospects.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBOPS304 Deliver and monitor a service to customers

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- deliver a service to at least three different customers, including:
 - using communication skills to establish rapport and build relationships with customers according to organisational requirements
 - identifying customer needs using appropriate questioning and active listening skills
 - providing customer service according to organisational requirements
 - responding to and recording customer feedback and action taken according to organisational standards, policies and procedures
 - producing a report which identifies and recommends ways to improve service delivery.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key provisions of customer service legislation and consumer law
- organisational policies and procedures relating to customer service, including complaints handling
- common forms of verifiable evidence that could be used to review customer satisfaction
- customer service standards and protocols for serving customers, including customers with specific needs.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- technology required to gather and provide information and assistance to customers

- workplace documents, and organisational policies and procedures relating to customer service
- examples of customer complaints and feedback.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBOPS404 Implement customer service strategies

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to advise, carry out and evaluate customer service strategies.

The unit applies to individuals who have well developed skills and a broad knowledge of customer service strategies for addressing customer needs and problems. Individuals may provide guidance or delegate work related tasks to others.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Business Operations

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Advise on customer service needs	1.1 Identify organisational customer service objectives and customer needs 1.2 Assess and clarify customer requirements 1.3 Identify and diagnose problems with service delivery 1.4 Develop options to improve customer service delivery according to organisational requirements 1.5 Provide recommendations to promote improvement of customer service delivery
2. Support implementation of customer service	2.1 Consult with relevant stakeholders to develop customer service strategies 2.2 Assess customer service strategies and opportunities against

ELEMENT	PERFORMANCE CRITERIA
strategies	customer service objectives 2.3 Identify and allocate available budget resources to fulfil customer service objectives 2.4 Action procedures to resolve customer difficulties and complaints according to organisational requirements
3. Evaluate and report on customer service	3.1 Review stakeholder satisfaction with service delivery according to organisational requirements 3.2 Identify and report changes necessary to meet customer service objectives 3.3 Prepare conclusions and recommendations on future directions of client service strategies 3.4 Monitor systems, records and reporting procedures for changes to customer satisfaction

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Reviews textual information and comprehends details that relate to the interests or requirements of the client and organisation
Writing	<ul style="list-style-type: none"> Creates a range of formal texts using structure, grammar and clear and specialised language to describe customer needs, maintain information and support a particular position
Oral communication	<ul style="list-style-type: none"> Uses pace, intonation, intelligible pronunciation and listening and questioning techniques to interact effectively with others
Numeracy	<ul style="list-style-type: none"> Recognises and interprets numerical information and performs calculations on familiar mathematical information
Enterprise and Initiative	<ul style="list-style-type: none"> Recognises and applies organisational protocols and meets expectations associated with own work
Teamwork	<ul style="list-style-type: none"> Uses a range of strategies to establish a sense of connection and build rapport with customers Collaborates with others contributing knowledge and skills to achieve joint outcomes
Planning and organising	<ul style="list-style-type: none"> Applies formal and logical processes when planning and implementing tasks Applies standard procedures when responding to familiar problems

Skill	Description
	within own work context
Technology	<ul style="list-style-type: none">• Uses digital technologies to access, organise, present and store information relevant to own role

Unit Mapping Information

Supersedes and is equivalent to BSBCUS401 Coordinate implementation of customer service strategies.

Supersedes but is not equivalent to:

- BSBCUS402 Address customer needs
- BSBCUS403 Implement customer service standards
- BSBSLS408 Present, secure and support sales solutions.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBOPS404 Implement customer service strategies

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- develop and implement at least two strategies to improve customer service delivery.

In the course of the above, the candidate must:

- respond to and report on customer feedback and complaints
- review client satisfaction using verifiable data
- consult and communicate effectively with relevant people
- develop and implement strategies and methods to improve customer service delivery, including:
 - budgeting
 - promotion to staff
 - documentation and follow up.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- customer communication techniques
- principles of customer service
- sources of verified client information
- techniques for identifying customer needs and reviewing customer satisfaction
- organisational business structure, products and services related to customer service
- techniques for drawing insights from verifiable evidence to develop recommendations and conclusions
- product and service standards and best practice models.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- organisational policies and procedures for customer service
- examples of customer complaints and feedback
- client satisfaction data.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBOPS502 Manage business operational plans

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to develop and monitor the implementation of operational plans to support efficient and effective workplace practices and organisational productivity and profitability.

The unit applies to individuals who manage the work of others and operate within the parameters of a broader strategic and/or business plans.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Business Operations

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish operational plan	1.1 Research, analyse and document resource requirements 1.2 Develop operational plan in consultation with, and with approval from, relevant stakeholders 1.3 Develop contingencies for operational plan 1.4 Explain plan to relevant work teams
2. Manage resource acquisition	2.1 Confirm that employees are recruited and inducted according to the organisation's human resources management policies, practices and procedures 2.2 Confirm that physical resources and services are acquired according to the organisation's policies, practices and procedures

ELEMENT	PERFORMANCE CRITERIA
	2.3 Identify and incorporate requirements for intellectual property rights and responsibilities related to acquisition of resources
3. Monitor and review operational performance	3.1 Assess progress of operational plan in achieving profit and productivity plans and targets 3.2 Identify areas of under-performance, recommend solutions and rectify the situation 3.3 Plan and implement relevant processes for ongoing monitoring and confirm that support is provided for individuals and teams 3.4 Negotiate recommendations for variations to operational plans and gain approval from designated persons

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Gathers, interprets and analyses workplace documentation to determine requirements for the operational plan
Writing	<ul style="list-style-type: none"> Develops and documents a range of detailed texts relating to the management of an operational plan according to organisational requirements
Oral communication	<ul style="list-style-type: none"> Presents information to a range of audiences using appropriate register, vocabulary and paralinguistic features Listens and comprehends information from a variety of spoken exchanges with clients, co-workers and other stakeholders
Numeracy	<ul style="list-style-type: none"> Selects and uses mathematical problem-solving strategies to organise resource requirements, performance benchmarks and financial viability of the operational plan
Enterprise and initiative	<ul style="list-style-type: none"> Monitors adherence to organisational policies, procedures and considers own role in terms of its contribution to broader goals of the work environment
Teamwork	<ul style="list-style-type: none"> Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction, influencing direction and taking a leadership role on occasion
Planning and organising	<ul style="list-style-type: none"> Takes responsibility for developing and implementing systems and processes to achieve organisational objectives, seeking advice, feedback and support as required to assist in the development and planning phase Sequences and schedules complex activities, monitors

Skill	Description
	implementation, and manages relevant communication
Problem solving	<ul style="list-style-type: none">• Uses systematic analytical processes to aid decision making, identify potential problems and generate contingency plans or solutions
Technology	<ul style="list-style-type: none">• Demonstrates awareness of the importance of data security in a digital environment

Unit Mapping Information

Supersedes and is equivalent to BSBMGT517 Manage operational plan.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBOPS502 Manage business operational plans

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- manage an operational plan for at least one business or work area.

In the course of the above, the candidate must:

- develop and implement an operational plan using a variety of information sources and consultation including:
 - resource requirements
 - key performance indicators
 - monitoring processes
 - contingency plans
- communicate with stakeholders to explain the plan and supporting information, seek approvals, negotiate variations and engage work teams
- confirm existence of relevant strategies, including strategies relating to:
 - recruiting, inducting and developing personnel
 - acquiring physical resources and services
 - protecting intellectual property
 - making variations to the plan
 - monitoring and documenting performance.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- stakeholders involved in development and management of operations plan including escalation points, colleagues and specialist resource managers
- key information sources for proposal development and presentation including resource requirement specialists

- consultation processes
- content of operational plans, including:
 - procurement processes
 - employee recruitment and induction strategies
 - physical resource and service acquisition strategies
 - key indicators of organisational performance
- budget and actual financial relating to profit and productivity
- methods for preparing operational plans and contingency plans
- role of an operational plan in achieving an organisation's objectives
- procedures and records associated with documenting performance
- approaches for developing key performance indicators to meet business objectives
- legislative and regulatory framework relating to the development and implementation of operational plan of the organisation, including:
 - fair trading laws
 - work health and safety
- organisational policies, practices and procedures that relate to the operational plan.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- legislation and regulations relevant to operational plans
- workplace documentation and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBOPS504 Manage business risk

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes skills and knowledge required to manage business risks in a range of contexts across an organisation or for a specific business unit or area in any industry setting.

The unit applies to individuals who are working in positions of authority and who are approved to implement change across the organisation, business unit, program or project area. They may or may not have responsibility for directly supervising others.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Business Operations

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish risk context	1.1 Evaluate organisational processes, procedures and requirements and determine scope for risk management process 1.2 Review strengths and weaknesses of existing arrangements 1.3 Document critical success factors, goals and objectives for area included in scope 1.4 Communicate risk management process to relevant stakeholders
2. Identify risks	2.1 Invite stakeholders to assist in the identification of risks 2.2 Research risks that may apply to scope 2.3 Document risks that apply to the scope, in consultation with relevant parties

ELEMENT	PERFORMANCE CRITERIA
3. Analyse risks	3.1 Assess likelihood of risks occurring 3.2 Assess impact or consequence if risks occur 3.3 Evaluate and prioritise risks for treatment
4. Select and implement treatments	4.1 Determine and select from options for treating risks 4.2 Develop action plan for implementing risk treatment 4.3 Communicate risk management processes to relevant parties 4.4 Implement action plan according to organisational policies and procedures 4.5 Monitor and evaluate risk management process

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Synthesises a variety of relatively complex texts Gathers, interprets and analyses textual information from a range of sources to identify relevant information
Writing	<ul style="list-style-type: none"> Develops textual material and organises content in a manner that effectively documents risk management analysis and assessment priorities and processes
Oral communication	<ul style="list-style-type: none"> Participates in interactions with stakeholders using questioning and listening to elicit opinions, and to confirm and clarify understanding
Numeracy	<ul style="list-style-type: none"> Uses numerical tools to assess risk and uses numerical data to review plans
Teamwork	<ul style="list-style-type: none"> Selects appropriate conventions and protocols when communicating with stakeholders about risk management Consults and negotiates with stakeholders about risk management processes and outcomes
Planning and organising	<ul style="list-style-type: none"> Sequences and schedules a range of routine and complex activities, monitors implementation, evaluates processes and manages relevant communication Systematically analyses information to decide on appropriate risk management treatments Refers to organisational processes, procedures and requirements when making decisions about risk management
Technology	<ul style="list-style-type: none"> Uses digital technologies and systems to access information,

Skill	Description
	document plans and communicate with others

Unit Mapping Information

Supersedes and is equivalent to BSBR501 Manage risk.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBOPS504 Manage business risk

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- lead at least one risk management process for an organisation or work area.

In the course of the above, the candidate must:

- analyse information from a range of sources to identify the scope and context of the risk management process, including:
 - stakeholder analysis
 - political, economic, social, legal, technological and policy context
 - current arrangements
 - objectives and critical success factors for the area included in scope
 - risks that may apply to scope
- consult and communicate with stakeholders to identify and assess risks, determine appropriate risk treatment actions and priorities and explain the risk management processes
- develop and implement an action plan to treat risks
- monitor and evaluate the action plan and risk management process
- maintain documentation.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislative and regulatory context of the organisation in relation to risk management
- organisational policies, procedures and processes for risk management, including document storage
- types of business risks
- options for treating risks
- risk management process
- purpose and key elements of current risk management standards

- tools and techniques to identify risks to scope risk management processes.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- legislation, regulations, standards and codes relating to risk management
- workplace documentation and resources relating to risk management.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBOPS505 Manage organisational customer service

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to develop strategies to manage organisational systems that ensure products and services are delivered and maintained to standards agreed by the organisation.

The unit applies to individuals who supervise customer service provided by others within an organisation. At this level, individuals must exercise considerable discretion and judgement, using a range of problem solving and decision making strategies.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Business Operations

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish customer requirements	1.1 Consult with customers to identify customer service requirements 1.2 Integrate customer feedback into organisation's business plan 1.3 Identify and procure resources required to address customer service requirements
2. Deliver quality products and services	2.1 Deliver product and service according to customer specifications within organisation's business plan 2.2 Monitor team performance and assess against the organisation's quality and delivery standards 2.3 Support colleagues to overcome difficulties in meeting

ELEMENT	PERFORMANCE CRITERIA
	customer service standards
3. Evaluate customer service	3.1 Develop and use strategies for monitoring progress against product and service targets and standards 3.2 Develop and use strategies for obtaining customer feedback on provision of product and service 3.3 Adapt delivery of customer product and service in consultation with relevant individuals and groups 3.4 Manage records, reports and recommendations within the organisation's systems and processes

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Interprets and analyses textual information from a variety of sources and applies the knowledge that has been gained to evaluate standards for organisation's products and services
Writing	<ul style="list-style-type: none"> Produces a range of text types to convey information, requirements or recommendations matching style of writing to purpose and audience
Oral communication	<ul style="list-style-type: none"> Clearly articulates systems and standards in a team environment using language suitable to diverse audiences Uses listening and questioning techniques to obtain feedback and confirm understanding
Numeracy	<ul style="list-style-type: none"> Interprets and comprehends mathematical information in organisation's business and customer service plans
Planning and organising	<ul style="list-style-type: none"> Recognises and applies organisational protocols and meets expectations associated with own work
Teamwork	<ul style="list-style-type: none"> Identifies and uses appropriate conventions and protocols when communicating with colleagues and customers Collaborates with others, taking into account their strengths and experience, to achieve desired outcomes Provides support in field of expertise to team
Enterprise and initiative	<ul style="list-style-type: none"> Develops and implements plans using logical processes and monitors and evaluates progress against stated goals
Problem solving	<ul style="list-style-type: none"> Accepts responsibility for addressing complex or non-routine difficulties, applying problem solving processes in determining a

Skill	Description
	solution
Technology	<ul style="list-style-type: none">• Uses digital technology to access, organise and present information in a format that meets requirements

Unit Mapping Information

Supersedes and is equivalent to BSBCUS501 Manage quality customer service.

Supersedes but is not equivalent to:

- BSBCUE504 Integrate customer engagement within the organisation
- BSBCUE601 Optimise customer engagement operations
- BSBCUE602 Manage customer engagement information
- BSBCUE603 Design and launch new customer engagement facilities
- BSBSLS501 Develop a sales plan.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBOPS505 Manage organisational customer service

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- develop and review strategy for delivering and monitoring quality customer service for an organisation or work area.

In the course of the above, the candidate must:

- implement quality customer service policies and procedures
- identify and resolve system problems relating to poor customer service
- assist teams to meet customer service requirements
- develop, procure and use human and physical resources to support quality customer service delivery.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislative and regulatory frameworks governing customer service
- elements of effective customer service including quality, time and cost
- organisational policies and procedures for customer service and handling customer complaints
- relevant service standards and best practice models
- key principles of public relations and product promotion
- common techniques for solving complaints
- principles and techniques involved in managing:
 - customer behaviour
 - specific customer needs
 - customer research
 - customer relations

- ongoing product and service quality
- problem identification and resolution
- quality customer service delivery
- record keeping and management methods
- strategies for monitoring, managing and introducing ways to improve customer service relationships
- strategies to obtain customer feedback.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- legislation, regulations and codes of practice related to customer service
- workplace documentation and resources
- complex customer complaints.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBOPS601 Develop and implement business plans

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to lead a business operation that covers the steps required to develop and implement business plans.

The unit applies to individuals who are running an organisation or who take a senior role in determining the effective functioning and success of the organisation. These individuals may oversee the work of a number of teams and other managers.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Business Operations

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish business plan	1.1 Identify organisational and legislative frameworks relevant to development of a business plan 1.2 Review market requirements for the organisation's products and service 1.3 Identify and assess business requirements, objectives, competitors and established plans 1.4 Develop performance objectives and measures for business plan, in consultation with relevant stakeholders 1.5 Identify financial, human and physical resource requirements for the business 1.6 Develop business plan

ELEMENT	PERFORMANCE CRITERIA
2. Implement business plan	2.1 Communicate business plan to all relevant stakeholders 2.2 Confirm skilled labour is available to implement plan 2.3 Test performance measurement systems and refine, where required 2.4 Prepare reports on key aspects of the business 2.5 Report system failures, product and service failures and variances to the business plan as they occur
3. Respond to performance data	3.1 Analyse performance reports against planned objectives 3.2 Review performance indicators and refine, where required 3.3 Identify and coach under-performing staff 3.4 Establish ongoing review processes

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Gathers, interprets and analyses textual information when developing the business plan and monitoring operational performance
Writing	<ul style="list-style-type: none"> Communicates relationships between ideas and information, matching style of writing to purpose and audience Researches, plans and prepares business plan for relevant stakeholders
Oral communication	<ul style="list-style-type: none"> Presents information and seeks advice using language and features appropriate to audience Participates in discussions using listening and questioning to elicit the views of others and to clarify or confirm understanding
Numeracy	<ul style="list-style-type: none"> Extracts and evaluates mathematical information to review the market, research competitors and review pricing structures
Enterprise and initiative	<ul style="list-style-type: none"> Takes full responsibility for identifying and complying with legislative requirements applicable to self and the organisation
Teamwork	<ul style="list-style-type: none"> Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction, influencing direction and taking a leadership role Provides support in field of expertise to colleagues, as required
Planning and organising	<ul style="list-style-type: none"> Sequences and schedules complex activities, monitors implementation and manages relevant communication

Skill	Description
	<ul style="list-style-type: none">• Systematically gathers and analyses all relevant information and evaluates options in order to monitor performance and identify opportunities for improvement

Unit Mapping Information

Supersedes and is equivalent to BSBMGT617 Develop and implement a business plan.

Supersedes but is not equivalent to:

- BSBCUE604 Develop and maintain a service level strategy
- BSBCUE606 Forecast and plan using customer engagement traffic information analysis
- BSBMGT618 Develop an engagement centre business plan.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBOPS601 Develop and implement business plans

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- develop and implement at least one business plan.

In the course of the above, the candidate must:

- analyse and research business vision, mission, values, objectives, goals, competitors, financial targets, management arrangements and marketing approaches
- write a business plan, including:
 - description of the business
 - products and services
 - financial, physical and human resource requirements
 - regulatory requirements
 - marketing strategy
 - financial indicators
 - productivity and performance targets for key result areas
- monitor and respond to business performance including evaluation of performance against key results indicators
- consult, communicate with and report to relevant stakeholders
- provide analysis of the strengths and weaknesses of a business plan.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- organisational and legislative frameworks required for the development of business plans, including:
 - pre-existing strategic, business and operational plans
 - business vision, mission, values and objectives

- permits or licences that may be required for new activity
- processes for developing and monitoring business plans
- customer needs and budgeting information
- performance objectives and measures, including key results indicators
- stakeholders involved in the development of business plans.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- business information and data relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPEF501 Manage personal and professional development

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to implement systems and process that support the personal and professional development of self and others.

The unit applies to individuals working in a range of managerial positions who are accountable for the development and performance of others.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Critical Thinking & Problem Solving – Personal Effectiveness

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Manage work goal development	1.1 Document team member responsibilities and identify organisational framework for development of work goals 1.2 Support others to develop work goals, plans and activities that align with their responsibilities 1.3 Assess others' work goals, plans and activities for alignment with organisational goals and provide feedback to team members 1.4 Facilitate access to personal and professional development opportunities that align to team member goals, plans and activities
2. Facilitate achievement of work priorities	2.1 Assess and prioritise personal, team and organisational demands 2.2 Use technology to manage work priorities of the team

ELEMENT	PERFORMANCE CRITERIA
	2.3 Identify and implement techniques to manage team health and wellbeing in the workplace
3. Develop and maintain professional competence	3.1 Document own development needs, priorities and plans using applicable competency standards, where required 3.2 Seek feedback from relevant personnel on own development needs 3.3 Participate in personal and professional development activities that address identified needs, priorities and plans

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Learning	<ul style="list-style-type: none"> Investigates and uses a range of strategies to develop personal competence
Reading	<ul style="list-style-type: none"> Analyses and interprets textual information from organisational policies and practices or feedback to inform personal development planning
Writing	<ul style="list-style-type: none"> Uses feedback to prepare reports that summarise ways to improve competence
Oral communication	<ul style="list-style-type: none"> Uses active listening and questioning to seek and receive feedback
Enterprise and Initiative	<ul style="list-style-type: none"> Identifies how own role contributes to broader organisational goals Considers organisational protocols when planning career development of self and others
Teamwork	<ul style="list-style-type: none"> Selects and uses appropriate conventions and protocols when communicating with diverse stakeholders Uses interpersonal skills to establish and build positive working relationships with others
Planning and organising	<ul style="list-style-type: none"> Plans and prioritises tasks in order to meet deadlines, manage role responsibilities and to manage own personal welfare Identifies and uses appropriate technology to improve work efficiency
Technology	<ul style="list-style-type: none"> Uses technology to manage and prioritise work tasks

Unit Mapping Information

No equivalent unit. Supersedes but is not equivalent to:

- BSBLED503 Maintain and enhance professional practice
- BSBWOR501 Manage personal work priorities and professional development.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPEF501 Manage personal and professional development

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- develop and implement a plan for own personal and professional development
- manage personal and professional development of at least two other individuals.

In the course of the above, the candidate must:

- identify roles and responsibilities of team members
- support two different individuals to develop work goals that align with their role and responsibilities
- facilitate team member access to relevant personal and professional development activities
- use technology to organise and prioritise tasks and commitments of a team or work area
- research and implement techniques for maintaining health and wellbeing of self and others
- develop personal work goals, plans and activities to meet work goals
- measure personal work performance, including assessing competency against competency standards
- participate in personal and professional development activities to develop professional competence.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- roles and responsibilities of team members
- principles and techniques involved in the management or organisation of:
 - performance measurement
 - personal behaviour, self-awareness and personality traits identification
 - personal development plans
 - personal goal setting

- task prioritisation
- common personal and professional development activities relevant to the industry
- technology to plan and prioritise work tasks
- techniques to manage health and wellbeing in the workplace
- organisation's human resources policies and procedures relevant to professional development.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to challenges and situations to demonstrate the application of performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPEF502 Develop and use emotional intelligence

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to develop and use emotional intelligence to increase self-awareness, self-management, social awareness and relationship management in the workplace.

The unit applies to individuals who are required to identify, analyse, synthesise and act on information from a range of sources and who deal with unpredictable problems as part of their job role. These individuals may be responsible for leading a team or work area.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Critical Thinking & Problem Solving – Personal Effectiveness

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to develop emotional intelligence	1.1 Develop evaluation criteria for assessing emotional strengths and weaknesses 1.2 Assess emotional strengths and weaknesses against evaluation criteria 1.3 Identify and analyse potential emotional stressors in the workplace 1.4 Identify methods for responding to emotional stressors 1.5 Seek feedback from others to identify and confirm methods for responding to emotional stressors in the workplace
2. Develop emotional	2.1 Analyse and document emotional responses of co-workers

ELEMENT	PERFORMANCE CRITERIA
intelligence	<p>2.2 Develop a plan for identifying and responding to a range of emotional expressions</p> <p>2.3 Apply techniques that indicate flexibility and adaptability in dealing with others in the workplace</p> <p>2.4 Apply techniques that show consideration for the emotions of others when making decisions</p> <p>2.5 Consult with relevant stakeholders and identify improvement areas for own emotional intelligence</p>
3. Promote development of emotional intelligence in others	<p>3.1 Identify workplace opportunities for others to express their thoughts and feelings</p> <p>3.2 Develop tasks for assisting others to understand effect of personal behaviour and emotions on others in the workplace</p> <p>3.3 Implement identified opportunities and tasks in the workplace according to organisational policy and procedures</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Learning	<ul style="list-style-type: none"> Identifies and uses strategies to improve own emotional intelligence
Oral communication	<ul style="list-style-type: none"> Uses appropriate language and nonverbal features to present information and seek feedback Uses listening and questioning skills to elicit the views of others and to clarify or confirm understanding
Teamwork	<ul style="list-style-type: none"> Identifies personal attributes and considers the impact on others and modifies approach to support development Adapts personal communication style to model behaviours, build trust and positive working relationships and to build understanding of emotional intelligence Leads a collaborative approach, using inquiring and inclusive techniques, to develop understanding and skills that enhances individuals' emotional intelligence
Enterprise and Initiative	<ul style="list-style-type: none"> Leads processes to develop, implement and monitor plans and processes to ensure team engagement and effectiveness

Unit Mapping Information

Supersedes and is equivalent to BSBLDR511 Develop and use emotional intelligence.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPEF502 Develop and use emotional intelligence

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- demonstrate emotional intelligence in relation to at least two different work tasks
- promote development of emotion intelligence in others on at least one occasion.

In the course of the above, the candidate must:

- develop assessment criteria to assess personal emotional strengths and weaknesses
- conduct an analysis to identify personal emotional triggers, incorporating feedback from others
- analyse and document interactions with co-workers
- develop and implement plans for responding to emotional expressions
- apply techniques that promote flexibility in interactions with others and show consideration for the emotions of others.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- application of emotional intelligence attributes, including:
 - self-awareness
 - self-management
 - social awareness
 - relationship management
- emotional intelligence principles and strategies
- strategies for communicating with a diverse workforce that has varying expressions of emotion
- methods to develop emotional intelligence in others
- emotional intelligence in the context of building workplace relationships.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to challenges and situations to demonstrate the application of performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG422 Apply project quality management techniques

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.
Release 2	This version first released with BSB Business Services Training Package Version 7.1. Release created to amend typographical error in the performance criteria.

Application

This unit describes the skills and knowledge required to enhance project outcomes by contributing to quality planning, applying quality policies and procedures, and contributing to continuous improvement in projects.

The unit applies to individuals who are project practitioners working in a project support role.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Unit Sector

Business Competence – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Contribute to project quality planning	1.1 Contribute to determining quality requirements of project stakeholders 1.2 Contribute to identifying quantifiable quality criteria for project deliverables 1.3 Locate and interpret policy and procedures for project quality 1.4 Contribute to developing quality requirements in the project plan and processes

ELEMENT	PERFORMANCE CRITERIA
2. Apply quality policies and procedures	2.1 Implement quality assurance in the project according to agreed quality standards and guidelines 2.2 Select and apply quality management tools and techniques to project processes according to organisational policy 2.3 Maintain quality-control records and audit documentation according to agreed procedures 2.4 Identify and maintain records against agreed quality requirements 2.5 Communicate shortfalls in quality outcomes to others to enable appropriate action to be initiated
3. Contribute to project continuous improvement process	3.1 Participate in a continuous improvement processes and review project outcomes 3.2 Report quality management issues and responses to others for application to future projects

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Reviews and evaluates project documentation and stakeholder feedback
Writing	<ul style="list-style-type: none"> Prepares and updates documentation, using appropriate language, and matching style of writing to purpose and audience Creates and updates records according to organisational requirements
Oral Communication	<ul style="list-style-type: none"> Uses clear language to share and review information with others
Numeracy	<ul style="list-style-type: none"> Extracts and evaluates mathematical information embedded in a range of tasks and texts
Self-management	<ul style="list-style-type: none"> Adheres to policies, procedures and legislative requirements
Teamwork	<ul style="list-style-type: none"> Selects appropriate communication practices in a range of work contexts Collaborates and cooperates with others to achieve shared goals
Planning and organising	<ul style="list-style-type: none"> Plans and organises tasks and activities to apply organisational quality compliance requirements Uses formal and informal processes to monitor implementation of plans and reflect on outcomes

Unit Mapping Information

Supersedes and is equivalent to BSBPMG411 Apply project quality management techniques.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG422 Apply project quality management techniques

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.
Release 2	This version first released with BSB Business Services Training Package Version 7.1. Release created to amend typographical error in the performance criteria.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- support project managers and other team members to apply project quality management techniques during at least two different projects.

In the course of the above, the candidate must:

- work in a team environment to plan and develop quality management and continuous improvement parameters
- apply quality management techniques in a project relevant to the organisation and industry context
- maintain accurate quality records
- contribute to project continuous improvement process.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- organisational policy and procedures for project quality
- continuous improvement processes
- quality-assurance processes and requirements
- quality-control processes and requirements
- quality criteria relevant to industry
- quality management tools and methodologies relevant to industry and organisation
- quality standards and their place in the project life cycle.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- project documentation used for quality management purposes
- project records.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG426 Apply project risk management techniques

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to assist with aspects of risk management in a project. It specifically involves planning for, controlling and reviewing risks associated with the project, and assisting in this process where required.

The unit applies to individuals who are project practitioners working in a project support role.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Assist with risk analysis and planning	1.1 Identify project deliverables, objectives and resources 1.2 Identify and prioritise potential and actual risks of project, and advise project manager 1.3 Establish with relevant personnel risk-analysis methods, techniques and tools 1.4 Contribute to developing risk management strategies, approaches and plans according to organisational policies and procedures 1.5 Contribute to developing and implementing risk-reporting mechanisms
2. Review risks and execute risk-control	2.1 Monitor actual and potential risks according to agreed project and risk management plans and advise project manager of

ELEMENT	PERFORMANCE CRITERIA
activities	<p>changing circumstances</p> <p>2.2 Identify opportunities and changing environment for project activities, and advise project manager</p> <p>2.3 Contribute to amending project and risk management plans and confirming plans reflect the changing environment</p> <p>2.4 Contribute to reporting opportunities for risk control</p>
3. Develop contingency plan	<p>3.1 Contribute to corrective action on risks according to risk management plan and delegated authority</p> <p>3.2 Contribute to review of contingency plans on an ongoing basis</p> <p>3.3 Confirm tasks allocated to individuals and teams are agreed with supervisor before implementation</p> <p>3.4 Apply and monitor risk-contingency measures</p>
4. Contribute to assessing risk management outcomes	<p>4.1 Contribute to ongoing review of project outcomes and determine effectiveness of risk management activities</p> <p>4.2 Seek feedback and identify risk management issues</p> <p>4.3 Report risk management issues and responses to relevant stakeholders</p> <p>4.4 Make changes to project management techniques based on feedback received</p>

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Applies appropriate strategies to construct meaning from complex texts
Writing	<ul style="list-style-type: none"> Documents results of analyses using required organisational formats Contribute to project documentations using structure and vocabulary appropriate to audience, context and purpose
Oral communication	<ul style="list-style-type: none"> Participates in a range of verbal exchanges using clear language and non-verbal features to provide relevant information Uses active listening and questioning techniques to elicit views and opinions of others
Self-management	<ul style="list-style-type: none"> Identifies responsibilities of own role in terms of its contribution to broader goals of work environment
Teamwork	<ul style="list-style-type: none"> Selects appropriate communication protocols in a range of work contexts

SKILL	DESCRIPTION
	<ul style="list-style-type: none">• Collaborates and cooperates with others to achieve shared goals
Planning and organising	<ul style="list-style-type: none">• Sequences and schedules required tasks and activities and manages relevant communication• Identifies outcomes to identify opportunities for future improvement

Unit Mapping Information

Supersedes and is equivalent to BSBPMG415 Apply project risk management techniques.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG426 Apply project risk management techniques

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- apply project risk management techniques during at least two different projects.

In the course of the above, the candidate must:

- assist project manager in identifying and prioritising potential risks and developing risk-management strategies, plans and reporting mechanisms
- apply, monitor and review risk-control measures, including contingency measures to mitigate risks
- evaluate, review and report on risk-management processes and make recommendations for future improvements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- risk-analysis methods, techniques and tools, including:
 - risk management strategies, plans and approaches
 - risk-reporting mechanisms for projects
 - collection methods for project risk records and other information according to organisational policies and procedures
 - risk-contingency measures.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- project management documentation for risk management
- workplace risk management policies and procedures.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG430 Undertake project work

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to undertake a minor project or a section of a larger project. It covers developing a project plan, administering and monitoring the project, finalising the project and reviewing the project to identify lessons learned for application to future projects.

The unit applies to individuals who play a significant role in ensuring a project meets timelines, quality standards, budgetary limits and other requirements set for the project.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish project parameters	1.1 Identify project scope 1.2 Define project stakeholders 1.3 Seek clarification from delegating authority of issues related to project and project parameters 1.4 Identify responsibilities of relevant stakeholders and reporting requirements 1.5 Clarify relationship of project to other projects and to the objectives of the organisation 1.6 Identify availability and access of resources for undertaking the project

ELEMENT	PERFORMANCE CRITERIA
2. Develop project plan	<p>2.1 Identify risks and develop a risk management plan for project, including Work Health and Safety (WHS)</p> <p>2.2 Develop project budget and timeframe and seek approval from relevant stakeholders</p> <p>2.3 Consult team members and apply their views in planning the project</p> <p>2.4 Identify and access appropriate project management tools</p> <p>2.5 Develop project plan according to project parameters and deliverables</p> <p>2.6 Finalise project plan and gain necessary approvals to commence project according to documented plan</p>
3. Administer and monitor project	<p>3.1 Communicate to project team members their responsibilities and project requirements</p> <p>3.2 Establish and maintain required recordkeeping systems throughout the project</p> <p>3.3 Implement and monitor plans for managing the project</p> <p>3.4 Undertake risk management as required</p>
4. Finalise and review project	<p>4.1 Complete financial recordkeeping associated with project and confirm according to agreed budget</p> <p>4.2 Complete project documentation and obtain sign-offs for concluding project</p> <p>4.3 Review project outcomes and processes against the project scope and plan</p> <p>4.4 Document feedback and suggested improvements</p>

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Organises, evaluates and critiques ideas and information from a range of complex texts
Writing	<ul style="list-style-type: none"> Develops plans, reports and recommendations using vocabulary, structure and conventions appropriate to text Establishes and maintains records according to organisational requirements
Numeracy	<ul style="list-style-type: none"> Uses formal and some informal, oral and written mathematical language and representation to prepare and communicate budgetary and financial

SKILL	DESCRIPTION
	information
Oral communication	<ul style="list-style-type: none"> Participates in verbal discussions using clear language and appropriate features to present or seek information Using listening and questioning skills to seek information and confirm understanding
Self-management	<ul style="list-style-type: none"> Identifies and responds to organisational and legislative/regulatory requirements
Teamwork	<ul style="list-style-type: none"> Selects and uses appropriate communication protocols and practices to ensure shared understanding of project roles and expectations Uses collaborative techniques to engage stakeholders in consultations and negotiations
Planning and organising	<ul style="list-style-type: none"> Develops and implements plans to manage projects that involve diverse stakeholders with potentially competing demands Systematically gathers and analyses all relevant information and evaluates options to make informed decisions Evaluates outcomes of decisions to identify opportunities for improvement
Technology	<ul style="list-style-type: none"> Uses digital technologies and applications to access, organise and share information

Unit Mapping Information

Supersedes and is equivalent to BSBPMG522 Undertake project work.

Supersedes but is not equivalent to BSBADM407 Administer projects.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG430 Undertake project work

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- undertake project work on a minor project or a section of a larger project.

In the course of the above, the candidate must:

- confirm the quality of project outcomes according to expectations of the organisation
- consult and communicate with relevant stakeholders to generate input and engagement in planning, implementing and reviewing the project
- provide support to team members to enable them to achieve deliverables and to transition them as appropriate at completion of the project.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- project management tools
- types of documents and other sources of information commonly used in defining the parameters of a project
- mission, goals, objectives and operations of the organisation
- relevant legislation and regulations, including work health and safety (WHS) requirements, for project planning
- project management processes according to policies and procedures of the organisation and including:
 - lines of authority and approvals
 - quality assurance
 - human resources
 - budgets and finance
 - risk management
 - recordkeeping

- reporting.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- relevant legislation, regulations, standards and codes
- workplace documentation and resources relevant to performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG532 Manage project quality

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to manage quality within projects. It involves determining quality requirements, implementing quality control and assurance processes, and using review and evaluation to make quality improvements in current and future projects.

The unit applies to individuals responsible for managing and leading a project in an organisation, business, or as a consultant.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine quality requirements	1.1 Identify quality objectives and standards with input from relevant stakeholders 1.2 Develop quality metrics for the project and any product output in a quality management plan 1.3 Select quality management methods and tools for resolving quality issues 1.4 Consult with project team and stakeholders on quality requirements
2. Implement quality processes	2.1 Perform quality assurance audit of project processes for compliance with agreed plans

ELEMENT	PERFORMANCE CRITERIA
	2.2 Assess quality control of project and product output according to agreed quality specifications 2.3 Identify causes of variance to quality metrics and undertake remedial action 2.4 Maintain a quality management system for timely recording of quality audit data
3. Implement project quality improvements	3.1 Review processes and implement agreed changes continually throughout the project life cycle 3.2 Review project outcomes against performance requirements 3.3 Identify and document lessons learned and recommended improvements

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Identifies, analyses and assesses textual information obtained from a range of sources and determines how content may be applied to requirements
Writing	<ul style="list-style-type: none"> Develops and documents quality requirements for project plan Records results of quality audits according to organisational requirements
Oral Communication	<ul style="list-style-type: none"> Participates in verbal exchanges using clear language and appropriate non-verbal features to provide and seek relevant information Uses active listening and questioning techniques to elicit views and opinions of others
Numeracy	<ul style="list-style-type: none"> Interprets information to determine measurable objectives Interprets numerical information to measure outcomes against objectives Uses analytical skills to review and evaluate process and decide on future improvements
Self-management	<ul style="list-style-type: none"> Takes responsibility for identifying and following policies, procedures and standards
Teamwork	<ul style="list-style-type: none"> Selects and uses appropriate communication practices in a range of work contexts Collaborates with others to foster shared understanding of quality requirements

SKILL	DESCRIPTION
Planning and organising	<ul style="list-style-type: none">Sequences and schedules complex activities, monitors actions against goals, adjusting plans and resources where necessary
Technology	<ul style="list-style-type: none">Uses digital applications to access, organise, integrate and share relevant information in effective ways

Unit Mapping Information

Supersedes and is equivalent to BSBPMG513 Manage project quality.

Supersedes but is not equivalent to BSBPMG605 Direct quality management of a project program.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG532 Manage project quality

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- manage project quality on at least two occasions.

In the course of the above, the candidate must:

- document a quality-management plan
- implement quality control and assurance processes for a defined project using a range of tools and methodologies.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- quality management theory
- relevant project quality standards that apply in the organisation
- quality assurance and control techniques, key tools and methodologies
- roles and responsibilities of quality management personnel
- methods for managing continuous improvement.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- project documentation including quality criteria, evidence of quality monitoring and improvement practices.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG535 Manage project information and communication

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to link people, ideas and information at all stages in the project life cycle. Project communication management ensures timely and appropriate generation, collection, dissemination, storage and disposal of project information through formal structures and processes.

The unit applies to individuals responsible for managing and leading a project in an organisation, business, or as a consultant.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan information and communication processes	1.1 Identify and analyse information requirements of the project 1.2 Develop a communication management plan according to project objectives 1.3 Establish a designated project-management information system
2. Implement project information and communication processes	2.1 Manage generation, gathering, storage, retrieval, analysis and dissemination of information by project staff and stakeholders 2.2 Implement, modify, monitor and control designated information-validation processes 2.3 Implement and maintain communication networks 2.4 Identify and resolve communication and

ELEMENT	PERFORMANCE CRITERIA
	information-management system issues
3. Assess information and communication outcomes	3.1 Finalise and archive records according to agreed project information ownership and control requirements 3.2 Review project outcomes for effectiveness of management information and communication processes and procedures 3.3 Develop and document recommended improvements for application in future projects

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Identifies and analyses complex texts from a range of sources
Writing	<ul style="list-style-type: none"> Develops project documents using vocabulary, structure and conventions appropriate to text
Oral Communication	<ul style="list-style-type: none"> Participates in verbal exchanges using clear language and appropriate non-verbal features Uses active listening and questioning to confirm understanding and agreement
Initiative and enterprise	<ul style="list-style-type: none"> Identifies responsibilities and boundaries of own role
Teamwork	<ul style="list-style-type: none"> Identifies requirements of important communication exchanges, selecting appropriate channels, format and content to suit purpose and audience
Planning and organising	<ul style="list-style-type: none"> Sequences and schedules complex activities, monitors implementation and manages relevant communication Uses problem-solving techniques to analyse and resolve issues Evaluates outcomes of decisions to identify opportunities for improvement Uses digital tools to access, organise and analyse complex data

Unit Mapping Information

Supersedes and is equivalent to BSBPMG516 Manage project information and communication.

Supersedes but is not equivalent to BSBPMG607 Direct communications management of a project program.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG535 Manage project information and communication

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- manage project information and communication on at least two occasions.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- alternative communication methods and media and their application on various projects
- effective project-management information systems and their various applications
- methods used to evaluate information systems and communication processes.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- project communication and information management documentation
- examples of how communication was managed on projects.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG536 Manage project risk

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to manage risks that may impact achievement of project objectives. It involves identifying, analysing, treating and monitoring project risks, and assessing risk management outcomes.

The unit applies to individuals responsible for managing and leading a project in an organisation, business, or as a consultant.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify project risks	1.1 Identify risk objectives and standards, with input from stakeholders 1.2 Identify project risk context to inform risk management processes 1.3 Identify project risks using valid and reliable risk identification methods
2. Analyse project risks	2.1 Identify risk analysis classification criteria and apply to agreed risk ranking system 2.2 Use risk analysis processes, within delegated authority, to analyse and qualify any risks, threats and opportunities 2.3 Identify risk priorities in agreement with project client and other

ELEMENT	PERFORMANCE CRITERIA
	stakeholders 2.4 Document risk analysis outcomes for inclusion in risk register and risk management plan
3. Establish risk treatments and controls	3.1 Identify and document existing risk controls 3.2 Analyse risk treatment options using agreed consultative methods 3.3 Record and implement agreed risk treatments 3.4 Update risk plans and allocate risk responsibilities to project team members
4. Monitor and control project risks	4.1 Establish risk review processes 4.2 Monitor risk environment and identify changed circumstances impacting project risks 4.3 Evaluate risk responses to changed environment 4.4 Implement agreed risk responses and modify plans
5. Assess risk management outcomes	5.1 Review project outcomes for effectiveness of risk-management processes and procedures 5.2 Develop recommended improvements for application in future projects 5.3 Identify and document risk management issues and recommended improvements for application to future projects

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Interprets and critically analyses complex texts from a range of sources and determines how content may be applied according to organisational requirements
Writing	<ul style="list-style-type: none"> Documents risk analysis and risk controls using required formats and structure Modifies and updates workplace documentation according to requirements
Oral Communication	<ul style="list-style-type: none"> Participates in verbal exchanges using clear language to provide and seek information Uses active listening and questioning techniques to confirm understanding

SKILL	DESCRIPTION
Numeracy	<ul style="list-style-type: none"> Analyses numerical data to identify project risk levels and rank risks according to agreed system of classification
Self-management	<ul style="list-style-type: none"> Identifies and adheres to organisational policies and standards Considers own role in terms of its contribution to broader goals of work environment
Teamwork	<ul style="list-style-type: none"> Selects and uses appropriate conventions and protocols when communicating with internal and external stakeholders to seek or share information Identifies requirements of important communication exchanges, selecting appropriate channels, format and content to suit purpose and audience
Planning and organising	<ul style="list-style-type: none"> Identifies and develops approaches to risk management and implements complex tasks to achieve outcomes Analyses information to make decisions, involving others when appropriate Uses formal and informal processes to monitor implementation of decisions and reflect on outcomes

Unit Mapping Information

Supersedes and is equivalent to BSBPMG517 Manage project risk.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG536 Manage project risk

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- manage project risk on at least two occasions.

In the course of the above, the candidate must:

- conduct effective risk management processes for a project of sufficient complexity
- apply risk management techniques, strategies and tools.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- project risks in a range of risk categories
- key components of a risk management plan
- relevant project risk controls
- industry sector risk classifications and different risk contexts
- organisational and industry standard risk frameworks
- project risk-management processes and procedures
- characteristics, techniques and applications of quantitative and qualitative risk management techniques and approaches.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- workplace documentation and resources
- feedback from project stakeholders about how risks were managed.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBPMG538 Manage project stakeholder engagement

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to manage stakeholder relationships.

The unit applies to individuals responsible for managing and leading a project in an organisation, business or as a consultant.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Project Management

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Assess stakeholder interests	1.1 Identify project objectives and relevant stakeholders 1.2 Establish stakeholder interests and expectations and determine forms of engagement 1.3 Determine and agree with relevant stakeholders on forms of engagement, communication methods, project content, budget and timelines 1.4 Identify and apply actions to address differing interests 1.5 Consider and advise stakeholders on project management issues
2. Monitor stakeholder engagement	2.1 Assign roles and responsibilities to team members according to interests and expectations and confirm defined project roles are followed 2.2 Develop knowledge management systems to capture team

ELEMENT	PERFORMANCE CRITERIA
	<p>progress, insights and experiences</p> <p>2.3 Conduct and lead stakeholder performance reviews</p> <p>2.4 Identify and address team member development needs and opportunities</p> <p>2.5 Support development of interpersonal skills of the team for stakeholder engagement</p>
3.Review and manage stakeholder engagement	<p>3.1 Communicate information as planned and according to authority levels, identifying and addressing variances</p> <p>3.2 Seek and respond to feedback from relevant stakeholders on management of stakeholder engagement</p> <p>3.3 Document identified improvements and feedback received for future management of stakeholder engagements</p>

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Identifies and interprets workplace documentation to determine relevant information
Writing	<ul style="list-style-type: none"> Documents information about stakeholder interests and communication needs using appropriate vocabulary and formats
Oral Communication	<ul style="list-style-type: none"> Participates in verbal exchanges using clear and detailed language to provide and seek information Uses active listening and questioning to confirm understanding
Self-management	<ul style="list-style-type: none"> Identifies and works according to role parameters
Teamwork	<ul style="list-style-type: none"> Identifies requirements of important communication exchanges, selecting appropriate channels, format and content to suit purpose and audience Collaborates with others to achieve joint outcomes, playing an active role in facilitating and leading activities
Planning and organising	<ul style="list-style-type: none"> Takes responsibility for decisions in complex situations involving multiple variables and constraints Uses analytical skills to identify and address problems

Unit Mapping Information

Supersedes and is equivalent to BSBPMG519 Manage project stakeholder engagement.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBPMG538 Manage project stakeholder engagement

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- manage project stakeholder engagements on at least two occasions.

In the course of above, the candidate must:

- develop and implement stakeholder engagement for a project
- implement a range of appropriate stakeholder communication mechanisms
- demonstrate team leadership for project team and stakeholders.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- stakeholder engagement approaches
- stakeholder interests and expectations
- stakeholder engagement methods
- stakeholder engagement theory
- types of project stakeholders
- conducting performance reviews.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- examples of project management documentation for stakeholder engagement
- records of project team leadership in stakeholder engagement activities.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

CPCCCA3001 Carry out general demolition of minor building structures

Modification History

Release 1.

Supersedes and equivalent to CPCCCA3001A Carry out general demolition of minor building structures.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Application

This unit of competency specifies the skills and knowledge required to carry out general demolition work of minor building structures to facilitate alterations, extensions and additions to a building in residential and commercial sites.

It includes work being completed to schedules, plans and specifications.

This unit is designed for those working as a member of a team safely demolishing existing building structures and disposing of the waste materials.

It applies to concreters, carpenters and other construction workers working as members of a team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
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<p>1. Plan and prepare the demolition of minor building structures.</p>	<p>1.1 Review and clarify task for demolition of minor building structures.</p> <p>1.2 Assess minor building structures to determine scope of demolition work.</p> <p>1.3 Review jurisdictional requirements for demolition of minor building structures.</p> <p>1.4 Review work health and safety (WHS) requirements for the task in accordance with safety plans and policies.</p> <p>1.5 Identify and manage risks including determining the status of existing services.</p> <p>1.6 Identify safety signage and barricade requirements.</p> <p>1.7 Review environmental requirements for the task in accordance with environmental plans and legislative requirements.</p> <p>1.8 Select plant, tools and equipment, check for serviceability and rectify or report any faults.</p>
<p>2. Demolish minor building structures.</p>	<p>2.1 Erect identified safety signage and barricades, and fit personal protective equipment (PPE).</p> <p>2.2 Complete preparatory work for demolition of minor building structures.</p> <p>2.3 Carry out demolition procedures in accordance with safe and effective processes of deconstructing or demolishing a minor building structure.</p> <p>2.4 Safely and effectively handle materials and building component parts to designated storage area using appropriate material-handling techniques.</p> <p>2.5 Safely and effectively handle, store and stack materials and components identified for salvaging, ready for transport.</p>
<p>3. Clean up after carrying out general demolition of minor building structures.</p>	<p>3.1 Clear work area and dispose of non-salvageable materials in accordance with legislation, regulations, codes of practice and task requirements.</p> <p>3.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications and workplace requirements.</p>

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

- writing skills to complete workplace documentation
- numerical skills to manage storage or removal of materials
- oral communication skills to:
 - use questioning to identify and confirm requirements
 - discuss cause of problems
 - report work site hazards, including faults in tools, equipment and materials.

Unit Mapping Information

Supersedes and is equivalent to CPCCCA3001A Carry out general demolition of minor building structures.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCA3001 Carry out general demolition of minor building structures

Modification History

Release 1.

Supersedes and equivalent to CPCCCA3001A Carry out general demolition of minor building structures.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Performance Evidence

To demonstrate competency in this unit, a person must carry out general demolition of one minor building structure, including removal of an external load-bearing wall to form an opening of no less than three metres wide.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- jurisdictional work health and safety (WHS) and environmental legislation and regulations relating to carrying out general demolition of minor building structures, including:
 - job safety analyses (JSAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - environmental and work site safety plans
- requirements of Australian Standards and the National Construction Code (NCC) relating to carrying out general demolition of minor building structures
- workplace requirements for all aspects of carrying out general demolition of minor building structures including interpreting work orders and other task documentation and reporting problems
- common industry hazard identification and risk controls for carrying out general demolition of minor building structures, including safe handling of materials and machinery, and the use of signage and barriers
- environmental requirements for carrying out general demolition of minor building structures, including those relating to:

- clean-up protection
- noise and dust
- vibration
- waste management
- processes for selection of appropriate tools, equipment and materials for carrying out general demolition of minor building structures
- techniques and processes for safely and effectively planning and carrying out dismantling or demolition work in accordance with legislation and codes of practice
- recognition and safe handling of materials and building component parts, and methods for salvage or disposal, including:
 - bonded asbestos
 - brickwork
 - concrete
 - glass
 - metal
 - reconstituted timber products
 - tiles
 - timber
- recognition and safe handling of materials and building component parts, and methods for salvage or disposal
- processes for demolition of minor building structures, including:
 - detached carports
 - external sections of buildings (walls, cladding, attached carports, decks and roofs)
 - internal sections of buildings (walling, lining, built-in components and wet area)
 - pergolas and patios
 - retaining walls and fences
 - small concrete structures
 - small ground level buildings
- processes for demolition of types of construction, including:
 - blockwork
 - brickwork
 - concrete
 - metal framing
 - timber framing
- processes for managing risks, including:
 - in areas below floors
 - identification, relocation or disconnection of services
 - loads supported by walls
 - security, and public health and safety
 - weatherproofing of the structure
 - existing services, including:

- electricity
- gas
- telephone and other communications
- water
- requirements for cleaning up work area and tools, materials storage and environmentally friendly waste management.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- a minor building structure for demolition
- specifications of the demolition task
- appropriate documents, materials, tools, equipment and PPE currently used in industry
- requirements of appropriate sections of legislation and regulations
- relevant workplace policies and procedures.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2006 Apply basic levelling procedures

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent unit CPCCCM2006B Apply basic levelling procedures.

Application

This unit of competency specifies the outcomes required to carry out levelling in a single plane for the purpose of establishing correct and accurate set-out of building components. It includes the set-up, testing and use of levelling devices, and establishing and transferring heights using a range of levelling equipment.

The unit supports workers in the construction industry who use a variety of common methods and equipment when working with others and as a member of a team. It applies to levelling work on residential and commercial work sites.

No licensing, legislative, regulatory, or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Common

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1. Plan and prepare.
 - 1.1. Job requirements are obtained, confirmed with relevant personnel, and applied to planning.
 - 1.2. Work site is inspected, and conditions and hazards are identified within scope of own role and reported according to workplace procedures.
 - 1.3. ***Health and safety requirements*** for levelling procedures are confirmed and applied to planning.
 - 1.4. ***Levelling tools and equipment*** are selected according to job requirements, checked for serviceability, and faults are rectified or reported before starting work.
 - 1.5. Team roles and verbal and non-verbal communication signals are confirmed, as required.
2. Set up and use levelling device.
 - 2.1. Required heights or levels are identified from work instructions.
 - 2.2. Levelling device is set up, and ***levelling device tolerance is checked*** according to manufacturer specifications.
 - 2.3. Levels are shot and heights are transferred to required location and ***marked*** according to job requirements.
 - 2.4. Results of ***levelling activities*** are documented according to organisational requirements.
3. Clean up.
 - 3.1. Work area is cleared and materials sorted and removed or recycled according to statutory and regulatory authority requirements.
 - 3.2. Tools and equipment are cleaned, checked, maintained and stored according to manufacturer specifications.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Numeracy skills to:	<ul style="list-style-type: none">interpret and calculate levelling readings and measurements.
Reading skills to:	<ul style="list-style-type: none">read and interpret documentation from a variety of sources, including drawings and specifications.
Writing skills to:	<ul style="list-style-type: none">enter routine data associated with levelling procedures legibly into workplace documentation.
Planning and organising skills to:	<ul style="list-style-type: none">plan and schedule work in a logical sequence.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Health and safety requirements</i> must include:	<ul style="list-style-type: none">emergency procedures, including:<ul style="list-style-type: none">evacuationfirst aidhazard identification and risk control proceduressafe operating procedures for levelling, including:<ul style="list-style-type: none">manufacturer specificationssafe work method statements (SWMS)safety data sheets (SDS)selection, correct fitting, and use of personal protective equipment (PPE) prescribed under legislation, regulations and workplace policies and practicesselection and use of tools and equipment.
<i>Levelling tools and</i>	<ul style="list-style-type: none">each of the following:

equipment must include:

- laser levels and targets
- marking equipment
- measuring tapes and rules
- spirit levels and straight edges
- two of the following:
 - automatic/optical levels
 - plumb bobs
 - water levels.

Levelling device tolerance checks must include one or more of the following:

- reverse readings for spirit level
- two peg test for automatic level.

Marks for heights or levels must include:

- chalk or nail mark
- mark on vertical surface
- datum or survey peg
- drawing or sketch.

Levelling activities must include three or more of the following:

- measuring and recording heights for the installation of signage
- positioning offsets and recovery pegs for construction projects
- recording ground levels at respective critical set-out points
- recording heights or level and the transfer of data points
- recording or checking levels in drainage
- recording slab or pad levels for placement of steel columns or masonry piers
- setting up levelling devices
- shooting levels for concrete slabs
- transferring levels and heights for formwork.

Unit Mapping Information

CPCCCM2006B Apply basic levelling procedures

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2006 Apply basic levelling procedures

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent unit CPCCCM2006B Apply basic levelling procedures.

Performance Evidence

A person who demonstrates competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must also transfer levels and record differences in height for three different projects as required by job specifications, using at least three of the following levelling devices:

- a spirit level and straight edge
- automatic/optical levelling device
- levelling with water technique
- laser levelling device.

In doing the above work, the person must:

- conduct a two peg test with an automatic/optical level to confirm that the instrument meets manufacturer tolerances
- locate, interpret and apply relevant information in job specifications to the levelling task
- comply with site safety plan, and health and safety regulations applicable to workplace operations
- comply with organisational policies and procedures, including quality requirements
- safely and effectively use tools and equipment
- communicate and work effectively and safely with others, including using agreed communication signals
- confirm accuracy of the readings taken, including set-up and movement of device in two locations
- accurately record results of each levelling procedure according to organisational requirements.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- characteristics, technical capabilities and limitations of different types of levelling devices
- methods of performing calculations associated with levelling
- processes for setting out levelling tasks
- requirements for line, level and plumb in construction projects
- site and equipment safety requirements relevant to basic levelling procedures
- symbols and construction terminology used when interpreting construction plans
- techniques used when applying basic levelling procedures
- contents of and terms used in job safety analyses (JSA) and safe work method statements (SWMS) and the use of this documentation when levelling.

Assessment Conditions

Suitable assessment of performance requires:

- equipment and tools:
 - as listed in the range of conditions and assessment requirements
- specifications:
 - job requirements
 - health and safety requirements
 - manufacturer specifications
 - safety data sheets (SDS)
 - SWMS
 - workplace and relevant work site procedures
- relationships with team members and supervisor:
 - work must be completed as part of a team and under direct supervision and observation
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2007 Use explosive power tools

Modification History

Release 1.

Supersedes and equivalent to CPCCCM2007B Use explosive power tools.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Application

This unit of competency specifies the skills and knowledge required to safely and effectively operate explosive power tools (EPTs) using explosive charges in a magazine to fasten materials or fix fasteners to bases.

The unit supports the application of knowledge to safely and effectively use a range of indirect action explosive powered fastening tools used in the construction industry.

It applies to workers who work with EPTs in the construction industry. It involves working under supervision in a team environment.

No licensing, legislative, or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1. Plan and prepare to set up, operate and maintain indirect action EPTs.	<p>1.1 Review and clarify task to set up, operate and maintain indirect action EPTs.</p> <p>1.2 Review work health and safety (WHS) requirements for the</p>

	<p>task in accordance with safety plans and policies.</p> <p>1.3 Identify safety signage and barricade requirements.</p> <p>1.4 Review environmental requirements for the task in accordance with environmental plans and legislative requirements.</p> <p>1.5 Calculate material quantity requirements.</p> <p>1.6 Check EPTs for operation in accordance with manufacturers' specifications and safety requirements for use of EPT.</p>
2. Set out fasteners.	<p>2.1 Erect identified safety signage and barricades, and fit personal protective equipment (PPE).</p> <p>2.2 Select fastener in accordance with requirements of the job.</p> <p>2.3 Set-out fasteners adhering to minimum distances for set out from edge of substrate material in accordance with requirements.</p> <p>2.4 Position material, check it is level, and temporarily fix or clamp into designed position in accordance with detailed drawings.</p>
3. Operate EPTs.	<p>3.1 Select charge in accordance with the requirements for material, base and penetration.</p> <p>3.2 Install any attachments and accessories to EPT in accordance with manufacturers' specifications and WHS requirements.</p> <p>3.3 Load fastener and charge into EPT in accordance with manufacturers' specification.</p> <p>3.4 Carry out EPT operation and fix fastener into place in accordance with manufacturers' specifications and legislative requirements.</p> <p>3.5 Check depth of fastening penetration and adjust power regulating device in accordance with conditions.</p> <p>3.6 Carry out misfire procedures in accordance with manufacturers' specifications and legislative requirements.</p> <p>3.7 Remove temporary holdings and fixings without damage to material.</p>
4. Maintain EPTs and kit.	<p>4.1 Check safety features of tools for serviceability in accordance with manufacturers' specifications.</p> <p>4.2 Clean and lubricate tools in accordance with manufacturers' specifications.</p> <p>4.3 Carry out periodic maintenance service in accordance with manufacturers' specifications.</p> <p>4.4 Replenish diminished stocks of charges and fasteners to designed effectiveness of EPT kit.</p> <p>4.5 Check and complete logbook and record maintenance in</p>

	accordance with manufacturers' specifications.
5. Secure and store EPT equipment and charges.	<p>5.1 Store used charges in designated container in accordance with requirements.</p> <p>5.2 Store unused fasteners, the EPT and attachments in a carry case in line with manufacturers' specifications.</p>
6. Clean up after operating EPTs.	<p>6.1 Clear work area and dispose of, re-use or recycle materials in accordance with legislation, regulations, codes of practice and task requirements.</p> <p>6.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications and workplace requirements.</p>

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

- reading skills to:
 - interpret legislative requirements including those of Australian Standards and the National Construction Code (NCC)
- numeracy skills to:
 - apply measurements and calculations to fastener set-out
- oral communication skills to:
 - use questioning to identify and confirm requirements
 - discuss cause of problems
 - report work site hazards, including faults in tools, equipment and materials.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM2007B Use explosive power tools.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2007 Use explosive power tools

Modification History

Release 1.

Supersedes and equivalent to CPCCCM2007B Use explosive power tools.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Performance Evidence

To demonstrate competency in this unit, a person must use explosive power tools (EPTs) to fix metal and timber to one steel base, one concrete base, and one masonry base.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- jurisdictional legislation and regulations relating to setting up, operating and maintaining indirect action EPTs including those for work health and safety (WHS), and protection of the environment, including:
 - job safety analyses (JSAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - environmental and work site safety plans
- requirements of Australian Standards and the National Construction Code (NCC) relating to setting up, operating and maintaining indirect action EPTs
- functions, operations and limitations of EPTs
- EPT materials
- EPT charges and fasteners
- EPT attachments, including channel, rebate and other manufacturer attachments
- EPT, fastener and charge manufacturers' specifications
- processes for interpreting drawings and using information for:
 - setting-out fasteners, including:
 - regulated minimum distances

- bases, including concrete, masonry or steel
- positioning material
- processes for:
 - using EPTs, including:
 - stripping and assembling tools
 - completing log of serviceability
 - maintaining and cleaning tools
 - selecting charges and fasteners applicable to the base material and material being fixed
 - misfire procedures
 - using attachments
 - complying with storage and security regulations and work health and safety (WHS) requirements for the working environment
 - selecting signage
 - test fire
- maintaining EPTs and kits
- securing and storing EPT equipment and charges
- materials storage and environmentally friendly waste management
- processes for the calculation of material requirements
- security and storage procedures for equipment and charges
- workplace and equipment safety requirements.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- industry-standard indirect action EPTs, attachments, fasteners and charges
- specifications for tasks requiring use of EPTs
- appropriate documents, materials, tools equipment and PPE currently used in industry
- requirements of appropriate sections of legislation and regulations
- relevant workplace policies and procedures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2008 Erect and dismantle restricted height scaffolding

Modification History

Release 1.

Supersedes and equivalent to CPCCCM2008B Erect and dismantle restricted height scaffolding.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Application

This unit specifies the skills and knowledge required to erect and dismantle restricted height scaffolding to provide work platforms for various occupational applications.

This unit is restricted to modular scaffolding to a height of 4 metres and includes:

- placement of safety barriers
- the application of knowledge to handle, erect and dismantle a range of restricted height scaffolding systems.

It applies to workers who work in a range of industries. It involves working in a team environment.

No licensing, legislative, or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1. Plan to erect	1.1 Review scaffolding task and workplace-specific information

scaffolding up to 4 metres.	<p>relating to the task and confirm with associated personnel.</p> <p>1.2 Identify environmental protection and legislative requirements for scaffolding task and incorporate into planning and preparation.</p> <p>1.3 Identify hazards, control measures and equipment associated with the workplace and scaffolding task from job safety analysis (JSA) and safe work method statement (SWMS).</p> <p>1.4 Calculate scaffolding and material requirements and incorporate into planning and preparation.</p> <p>1.5 Determine expected loading on scaffold and supporting structure using load tables, and incorporate into planning and preparation.</p> <p>1.6 Identify site access and egress routes and incorporate into planning and preparation.</p> <p>1.7 Plan scaffolding task in accordance with workplace requirements.</p>
2. Prepare to erect scaffolding up to 4 metres.	<p>2.1 Apply risk control measures and equipment including installing safety signs and barriers and using personal protective equipment (PPE).</p> <p>2.2 Select plant, tools and equipment, check for serviceability and rectify or report any faults.</p> <p>2.3 Select, prepare and locate materials using safe handling techniques.</p> <p>2.4 Inspect scaffolding and components and label, reject or repair damaged items.</p>
3. Erect scaffolding up to 4 metres.	<p>3.1 Establish footing in accordance with the Australian Standard for scaffolding.</p> <p>3.2 Erect scaffolding in accordance with regulations, planned risk prevention and control measures, acceptable safe work practices and manufacturers' specifications.</p>
4. Inspect, repair and alter scaffolding up to 4 metres.	<p>4.1 Inspect critical structural and safety areas of scaffolding for damage, corrosion and wear.</p> <p>4.2 Check current use of scaffolding for compliance with type of scaffolding equipment.</p> <p>4.3 Review scaffolding to determine if changes or modifications were scheduled as per original planning.</p> <p>4.4 Carry out alterations or repairs.</p> <p>4.5 Complete inspection log and handover.</p>

<p>5. Dismantle scaffolding up to 4 metres and clean up.</p>	<p>5.1 Dismantle scaffolding using reverse of procedure for erection.</p> <p>5.2 Clear work area and dispose of, re-use or recycle materials in accordance with legislation, regulations, codes of practice and task specifications.</p> <p>5.3 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' specifications and workplace requirements.</p>
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Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

- reading skills to:
 - understand written instructions, procedures and signage
- oral communication skills to:
 - use questioning to identify and confirm requirements
 - discuss cause of problems
 - report work site hazards, including faults in tools, equipment and materials
 - provide feedback.

Unit Mapping Information

Supersedes and is equivalent to CPCCCM2008B Erect and dismantle restricted height scaffolding.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2008 Erect and dismantle restricted height scaffolding

Modification History

Release 1.

Supersedes and equivalent to CPCCCM2008B Erect and dismantle restricted height scaffolding.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Performance Evidence

A person who demonstrates competency in this unit must erect and dismantle one modular scaffolding system up to four metres, including three bays (one with a return), one lift with ladder, and fall and edge protection.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- processes for identifying and incorporating into planning for erecting and dismantling scaffolding up to 4 metres
- task and workplace-specific information, including:
 - diagrams and sketches
 - engineering design specifications and manufacturers' specifications
 - safety data sheets (SDSs)
 - regulatory and legislative requirements pertaining to erecting and dismantling restricted height scaffolding
 - relevant Australian Standards.
- safe work procedures related to erecting and dismantling restricted height scaffolding including job safety analysis (JSA) and safe work method statement (SWMS), risk control measures and equipment, including:
 - signage and barricades
 - verbal, written and graphical instructions
 - work schedules, plans and specifications
 - scaffolding and material requirements
 - expected loadings on scaffolding and supporting structures
 - site access and egress routes.

- processes for:
 - selecting and checking plant, tools and equipment and rectifying or reporting faults
 - establishing footings for scaffolding up to 4 metres
 - erecting and dismantling scaffolding up to 4 metres in accordance with regulations, planned risk prevention and control measures, acceptable safe work practices and manufacturers' specifications
 - inspecting critical structural and safety areas of scaffolding for damage, corrosion and wear
 - checking current use of scaffolding for compliance with type of scaffolding equipment
 - cleaning, checking, maintaining and storing plant, tools and equipment.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- work sites and specifications to erect and dismantle a modular scaffolding system
- JSAs, SWMSs and jurisdictional requirements relating to erecting and dismantling a modular scaffolding system up to 4 metres
- scaffolding site
- scaffolding components and materials, safety equipment including signs, barricades and personal protective equipment (PPE)
- plant, equipment and tools
- load tables.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM2010 Work safely on scaffolding higher than two metres

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Application

This unit of competency specifies the outcomes required to work safely on construction sites where the work activity involves working above two metres from ground level and where fall protection measures are required. It covers safe methods for accessing the work site; and safe methods of moving or passing tools, equipment and materials to heights above two metres, including handling methods that avoid excessive bending or twisting.

The unit supports construction workers operating from scaffolding over two metres in height that has already been constructed with signage and exclusion barriers in place, in order to reach upper storeys or roofs of buildings. It applies to workers who need to control the risk of falling and of falling objects when working on site or removing scaffold components.

It applies to construction work on residential and commercial work sites in new construction, renovation or refurbishment, and maintenance projects.

No licensing, legislative, regulatory, or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Common

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- | | |
|--------------------------------|--|
| 1. Identify work requirements. | 1.1. Site of proposed work at heights is identified from relevant information. |
| | 1.2. Tasks to be completed are identified from work orders and supervisor instructions. |
| | 1.3. Personal protective equipment (PPE) suitable to the job is selected and checked for serviceability. |
| | 1.4. Method of accessing work area is identified according to <i>safe work method statement</i> (SWMS). |
| | 1.5. Safe work methods for moving tools, equipment and materials to work area are identified to minimise risks. |
| | 1.6. Verbal and non-verbal communication signals are confirmed with team members, supervisor and other personnel working on site, as required. |
| 2. Access work area. | 2.1. Work site is inspected and conditions and <i>hazards</i> are assessed and reported, as required, and risk controls selected according to SWMS. |
| | 2.2. <i>Safety of scaffolding</i> is checked and faults are reported to relevant personnel. |
| | 2.3. Arrangements are made to install required access equipment according to SWMS. |
| | 2.4. Access equipment is inspected for defects and issues are reported and rectified according to health and safety requirements. |
| | 2.5. Safe work methods are used to access work area and to move tools, equipment and materials to required locations on the work site. |
| | 2.6. Tools and materials are placed to eliminate or reduce the risk of items falling. |

- | | | |
|----|--------------------------|--|
| 3. | Conduct work tasks. | 3.1. Work is conducted following workplace-approved procedures and SWMS. |
| | | 3.2. Communication with team members and other site personnel is maintained as required to progress work tasks according to required timelines. |
| | | 3.3. Fall protection equipment is kept in place and adjusted to cater for movement during work. |
| | | 3.4. Scaffold components and fall barriers are kept in place during work. |
| 4. | Finalise work processes. | 4.1. Egress from work area is completed following SWMS and work site supervisor approved methods for moving self, tools and materials to ground level. |
| | | 4.2. Tools, equipment and materials returned to ground level are cleaned, checked, maintained and stored according to manufacturer specifications. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Numeracy skills to:	<ul style="list-style-type: none"> • perform measurements relating to checking safety of scaffolding.
Oral communication skills to:	<ul style="list-style-type: none"> • report faults in scaffolding construction or materials • report non-routine hazards to a supervisor.
Reading skills to:	<ul style="list-style-type: none"> • interpret safe work methods and risk control strategies in the SWMS relating to job tasks.
Planning and organising skills to:	<ul style="list-style-type: none"> • plan and schedule work in a logical sequence.
Initiative and enterprise	<ul style="list-style-type: none"> • identify standard controls for routine hazards.

skills to:

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

- Safe work method statement*** must include:
- establishing exclusion areas using signage and barricades
 - identifying hazards and assessing risks associated with work site and job tasks
 - health and safety and environmental requirements mandated by regulatory authorities, work site safety plan, and workplace procedures
 - identifying risk control measures to be implemented for job tasks
 - safe operating procedures for:
 - accessing, moving within, and leaving work site
 - moving and placing tools, equipment and materials
 - using tools and equipment, including PPE, prescribed by legislation, regulations, and work site and workplace requirements
 - using tools and equipment at heights.

- Hazards*** to be considered must involve:
- air temperature
 - construction activity involving other workers and contractors
 - dust and vapours
 - electrical equipment
 - energy sources
 - equipment and materials
 - hazardous materials
 - light
 - manual handling
 - moisture
 - noise
 - stationary and moving plant
 - working at heights.

- Safety of scaffolding***
- access gate

- must include checking for:
- bracing
 - condition of scaffold frame and planks
 - guard rails
 - locking pins for castors, if present
 - mid-rails
 - sheeting, if required
 - toe boards.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM2010 Work safely on scaffolding higher than two metres

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must also identify, assess and manage risks while completing three different work tasks on scaffolding higher than two metres at different locations and in different conditions.

The work tasks conducted must involve transporting tools, equipment and materials to the work site; completing the task using the tools, equipment and materials; and then returning them to ground level.

In doing the above work, the person must:

- locate, interpret and apply relevant job task information, standards and specifications
- comply with site safety plan and safe work method statements (SWMS) for access to the work site and completion of the job tasks at heights
- safely and effectively use tools, plant and equipment
- communicate and work effectively and safely with others
- select and use height access work methods, including inspecting scaffold for faults
- apply knowledge of construction materials to identify:
 - manual handling risks
 - types of lifting and support structures approved for use
- modify work activities to cater for variations in work site procedures, contexts and environment to work safely at heights
- use safe handling requirements, based on information provided for equipment, products and materials.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- construction terminology relevant to working at heights

- contents of and terms used in job safety analyses (JSA) and SWMS for accessing work sites at heights and for completing job tasks while working at heights
- contents of and terms used in safety data sheets (SDS) relevant to the use of tools, equipment and materials
- emergency procedures relevant to working on scaffolding higher than two metres
- quality requirements relating to the set-up of equipment for accessing heights, and for job tasks completed while working at heights
- requirements of Australian standards and codes of practice governing work at heights, including:
 - AS 6001 Working platforms for housing construction
 - AS/NZS 1576 Scaffolding – General requirements
 - AS/NZS 4576 Guidelines for scaffolding
 - Safe Work Australia Model Code of Practice – Preventing Falls in Housing Construction
- types, characteristics, uses and limitations of plant, tools and equipment, including personal protective equipment (PPE), used for accessing work sites over two metres, and for applying safe work methods to complete job tasks while working at heights
- common faults in scaffolding and access equipment
- workplace and work site health and safety requirements relevant to working at heights.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - scaffolding erected for access to a construction work site higher than two metres
 - access equipment to move self, tools, equipment and materials to working platforms, including ladders and hoists
 - tools, equipment and materials to conduct the work tasks specified in the performance evidence
 - PPE relevant to task
- materials:
 - materials required to perform three work tasks at height
- contingencies:
 - faults in scaffolding construction and access equipment
- specifications:
 - AS 6001 Working platforms for housing construction
 - AS/NZS 1576 Scaffolding – General requirements
 - AS/NZS 4576 Guidelines for scaffolding
 - diagrams or sketches relating to work at heights
 - instructions issued by authorised organisational or external personnel
 - JSA, SWMS and SDS relating to the work to be conducted at heights

- Safe Work Australia Model Code of Practice – Preventing Falls in Housing Construction
- schedules, plans and specifications for working at heights
- signage at the work site
- verbal, written and graphical instructions relating to work to be conducted at heights
- physical conditions:
 - different weather conditions, such as wet or windy weather
- relationships with team members and supervisor:
 - work must be completed as part of a team and under direct supervision and observation
- timeframe:
 - according to job specification.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM3001 Operate elevated work platforms up to 11 metres

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCCM3001C Operate elevated work platforms.

Application

This unit of competency specifies the outcomes required to operate specific types of elevated work platforms (EWPs) safely and effectively in different locations, including on uneven terrain. The unit includes locating, setting up, operating and shutting down scissor lifts and self-propelled boom lifts with a boom length under 11 metres.

The unit supports construction workers in the safe and effective operation of electrical, hydraulic and mechanical EWPs.

The unit does not cover truck-mounted EWPs, powered telescoping devices, hinged devices or articulated devices, or any combination of these used to support a platform on which personnel, equipment and materials may be elevated to perform work and which has a boom length of 11 metres or more.

It applies to construction work on residential and commercial work sites in new construction, renovation or refurbishment, and maintenance projects.

Licensing, legislative, regulatory or certification requirements apply to this unit in some States. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Pre-requisite Unit

Nil

Competency Field

Common

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1. Plan and prepare.
 - 1.1. Job requirements are obtained, confirmed and applied to planning.
 - 1.2. Work site is inspected and terrain level checked to determine stabilising and safe working area requirements.
 - 1.3. Work site conditions and hazards are assessed and site health and safety requirements confirmed and applied to planning.
 - 1.4. ***Safe work method statement*** (SWMS) for the type of EWP and job and work site requirements is reviewed with relevant personnel and confirmed.
 - 1.5. Plant, tools and equipment, including personal protective equipment (PPE), are selected according to job requirements, checked for serviceability, and faults are rectified or reported before starting work.
 - 1.6. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use.
 - 1.7. Verbal and non-verbal communication signals are confirmed with team members, supervisor, and other personnel working on site, as required.
 - 1.8. Rescue plan, including use of fall arrest system, is established and practised before using EWP.

2. Conduct routine checks of EWP.
 - 2.1. Power source is connected to platform equipment according to manufacturer specifications.
 - 2.2. Routine pre-operational equipment checks are carried out according to operator manual or manufacturer specifications, and logbooks for defect checks and EWP maintenance schedules.
 - 2.3. Equipment is switched on in line with start-up procedures, and controls are checked for correct operation and ease of movement.
 - 2.4. EWP is checked to ensure that *emergency safety devices* specified in operator manual are present and operating correctly.

3. Locate EWP in place.
 - 3.1. Platform is positioned for work application and stabilisers, if fitted, are engaged to set equipment base level into place according to safe operating procedures.
 - 3.2. Tools, equipment and materials are placed into bucket or on platform according to job application requirements.

4. Elevate platform to work location.
 - 4.1. Fall arrest harness is fitted securely and lanyard is connected to attachment point.
 - 4.2. EWP controls are operated according to manufacturer recommendations and platform is elevated to work position.
 - 4.3. Power is switched off where specified and locking devices are engaged according to operator manual.
 - 4.4. Work is carried out according to job specification, operator manual, and health and safety requirements.

5. Lower platform and shut down.
 - 5.1. Controls are operated according to manufacturer recommendations and platform is lowered to down position.
 - 5.2. Shut-down procedures are carried out according to operator manual instructions and equipment is switched

off.

- | | |
|--------------|--|
| 6. Clean up. | <p>6.1. Work area is cleared and materials disposed of, reused or recycled according to legislation, regulations, codes of practice, and job specifications.</p> <p>6.2. EWP, tools and equipment are cleaned, checked, maintained and stored according to manufacturer recommendations and standard work practices.</p> <p>6.3. <i>Work completion procedures</i> are applied and relevant personnel notified that work is finished.</p> |
|--------------|--|

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Numeracy skills to:	<ul style="list-style-type: none"> • interpret safe working load of EWP from manufacturer specifications • calculate the load to be put on EWP.
Oral communication skills to:	<ul style="list-style-type: none"> • provide work site personnel with key safety information when elevating and lowering an EWP • use listening and questioning to clarify job and health and safety requirements.
Reading skills to:	<ul style="list-style-type: none"> • interpret operator manual instructions for using different controls of EWPs and operating on different types of terrain.
Writing skills to:	<ul style="list-style-type: none"> • legibly complete required documentation, including: <ul style="list-style-type: none"> • equipment inspection and handover documents that form part of work completion procedures • faulty equipment or workplace incident reports.
Planning and organising	<ul style="list-style-type: none"> • plan and schedule work in a logical sequence.

skills to:

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Safe work method statement must include:

- assessing terrain at work site
- identifying location of overhead power lines directly above or within specified clearance distances as set out in documentation, such as WorkSafe Victoria's 'No Go Zones For Overhead Electrical Power Lines'
- reference to permission to operate EWP from the power authority, if required
- identifying hazards and assessing risks for type of EWP, work site and job tasks, including existence of underground pits
- health and safety and environmental requirements mandated by regulatory authorities, work site safety plan, and workplace procedures
- establishing exclusion areas using signage and barricades
- identifying risk control measures to be implemented for job tasks
- safe operating procedures for type of EWP
- safe working load of the EWP
- using tools and equipment, including PPE, prescribed by legislation, regulations, and work site and workplace requirements.

Emergency safety devices must be applicable to the EWP and include three or more of the following:

- bleed valves
- electronic override
- emergency electric hydraulic pump
- emergency or controlled descent device
- ground controls
- manual hydraulic pump.

Work completion procedures must include:

- completing logbook
- completing post-operational checks
- safely and securely storing safety equipment.

Unit Mapping Information

CPCCCM3001C Operate elevated work platforms

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM3001 Operate elevated work platforms up to 11 metres

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCCM3001C Operate elevated work platforms.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must also set up and operate each of the following types of elevated work platforms (EWPs) at two different locations on the site, including moving the plant around the work site safely:

- self-propelled boom lift (BL)
- scissor lift (SL).

The following functions and controls must be performed while operating both BL and SL:

- boom up and down
- operate attachments
- operate outriggers, where fitted.

The following functions and controls must be performed while operating the BL:

- slew left and right
- telescope in and out.

At least one EWP must be set up and operated on uneven terrain, using outriggers as required.

In doing the above, when working above six metres, the person must fit harnesses and attach lanyards as follows:

- energy or shock absorbers, which must be used with all fall arrest equipment

- lanyards, which must be attached to the harness installed so that the maximum distance a person equipped with a harness would free fall before the fall arrest system takes effect is two metres.

In doing the above, the person must also:

- establish and apply a rescue plan
- apply safe operating procedures, including conducting operational risk assessment and treatments associated with:
 - earth leakage boxes
 - lighting
 - power cables, including overhead service trays, cables and conduits
 - restricted access barriers
 - surrounding structures
 - traffic control
 - trip hazards
 - work site visitors and the public
 - working at heights up to 11 metres
 - working in proximity to others
 - working with dangerous materials
- locate, interpret and apply information relating to job requirements, including:
 - diagrams and sketches
 - environmental requirements, including:
 - clean-up protection
 - noise and dust management
 - vibration management
 - waste management
 - quality requirements relevant to EWP work
 - instructions issued by authorised organisational and external personnel
 - manufacturer specifications, operator manual, and instructions where specified
 - signage
 - industry standards and job specifications
 - verbal, written and graphical instructions
 - work schedules, plans and specifications
- comply with site safety plan and health and safety legislation, regulations and codes of practice applicable to workplace operations
- safely and effectively use tools, plant and equipment relevant to EWP work
- ensure safe working load of EWP is not exceeded
- communicate with others on the work site using verbal and non-verbal communication and communication technology
- work effectively and safely with others on the work site.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- functions and operational limitations of EWP equipment
- types of EWP equipment and health and safety authority certification of competency requirements
- controls and techniques for using EWP
- health and safety requirements for construction work sites, including:
 - procedures relating to equipment operation, including emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements, and evacuation procedures
 - hazard identification and risk control procedures, including for handling hazardous materials and dangerous goods
 - selection and use of personal protective equipment (PPE)
 - location and use of firefighting equipment
 - selection and use of tools and equipment
- processes for identifying equipment faults
- general construction terminology relevant to operating EWPs
- safe operating procedures for operating EWPs, including contents of and terms used in:
 - job safety analyses (JSA)
 - safe work method statements (SWMS)
 - safety data sheets (SDS)
- processes for calculating load mass requirements
- quality requirements relevant to operating EWPs
- regulatory and legislative requirements relevant to operating EWPs
- AS 2550 Set: Cranes, hoists and winches - Safe use
- relevant Acts, regulations and codes of practice relevant to working safely at heights on construction sites
- procedures for working safely at heights
- signalling methods and communications relevant to operating EWPs
- types, characteristics, use and limitations of plant, tools and equipment relevant to operating EWPs
- use and limitations of fall rescue systems.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - EWPs
 - extension leads
 - safety harnesses and lanyards
 - special attachments for the EWP when shifting equipment

- PPE prescribed under legislation, regulations, codes of practice and workplace policies and practices
- materials:
 - logbooks
 - service manuals
 - operator manuals
- contingencies:
 - uneven terrain
- specifications:
 - AS 2550 Set: Cranes, hoists and winches - Safe use
 - job specifications
 - manufacturer specifications
 - SWMS
- physical conditions:
 - different weather conditions
- relationship with team members and supervisor:
 - work is conducted as part of a team
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM3003 Work safely around electrical sources, services and assets

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCCM3003A Work safely around power sources, services and assets.

Application

This unit of competency specifies the outcomes required to ensure the safety of personnel and equipment when working with or operating plant while in close proximity to electrical sources, underground and overhead services, and assets.

The unit supports construction workers working on powered construction sites who must check and confirm the location of electrical sources, underground and overhead services, and assets before commencing work. It applies to residential and commercial work sites.

No licensing, legislative, regulatory, or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Common

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1. Plan and prepare.
 - 1.1. Work instructions, including plans, specifications, environmental and quality requirements, and operational details, are obtained, confirmed with relevant personnel, and applied to planning.
 - 1.2. ***Health and safety requirements*** are identified and applied to planning.
 - 1.3. Plant, tools and equipment are selected to carry out tasks according to job requirements, checked for serviceability, and any faults are rectified or reported prior to starting work.

2. Apply safe work practices.
 - 2.1. Relevant authorities are contacted to identify type and location of ***electrical sources, underground or overhead services, and assets***.
 - 2.2. Plant is positioned according to safe work method statement (SWMS).
 - 2.3. Plant operation procedures are followed to comply with SWMS.
 - 2.4. Work is conducted in or around the electrical source, service or asset according to SWMS.
 - 2.5. On completion of work, personnel, plant and equipment are retracted from powered area following SWMS.

3. Clean up.
 - 3.1. Work area is cleared and materials disposed of, reused or recycled according to legislation, regulations, codes of practice and job specifications.
 - 3.2. Plant, tools and equipment are cleaned, checked, maintained and stored according to manufacturer recommendations and standard work practices.
 - 3.3. Work completion procedures are followed and relevant

personnel are notified that work is finished.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none">• evaluate the relevance of information relating to the location of electrical sources, underground or overhead services, and assets to the work to be undertaken.
Oral communication skills to:	<ul style="list-style-type: none">• share information with team members and other personnel on site• participate in straightforward conversations with colleagues and external authorities, and ask questions to identify and confirm requirements.
Reading skills to:	<ul style="list-style-type: none">• interpret a range of documentation, including SWMS, site plans and job specifications.
Writing skills to:	<ul style="list-style-type: none">• report faults in plant or equipment to relevant personnel.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Health and safety requirements</i> must include:	<ul style="list-style-type: none">• emergency procedures, including:<ul style="list-style-type: none">• first aid• evacuation• location and use of firefighting equipment• hazard identification and risk control procedures, including for handling hazardous materials and substances• safe operating procedures, including the conduct of operational
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risk assessment and treatments associated with:

- earth leakage boxes
- job specifications
- lighting
- manual handling techniques
- electric lines, including overhead service trays, cables and conduits
- restricted access barriers
- safety data sheets (SDS)
- surrounding structures
- traffic control
- trip hazards
- use of signage and barricades
- requirements for:
 - work site visitors and the public
 - working at heights
 - working in confined spaces
 - working in proximity to others
- selection, correct fitting, and use of personal protective equipment (PPE) prescribed under legislation, regulations and workplace policies and practices
- selection and use of tools and equipment
- workplace environmental requirements.

Electrical sources, underground or overhead services, and assets must include:

- distribution towers
- generators
- poles
- substations
- temporary services
- train and tram assets
- transmission towers
- underground and overhead lines
- underground conductors.

Unit Mapping Information

CPCCCM3003A Work safely around power sources, services and assets

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM3003 Work safely around electrical sources, services and assets

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCCM3003A Work safely around power sources, services and assets.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. On two different sites the person must also:

- locate electrical sources, underground and overhead services, and assets
- undertake work according to the safe work method statement (SWMS)
- retract from powered area on completion of work.

The above work must involve:

- locating, interpreting and applying information, standards and specifications relating to working safely around electrical sources, services and assets
- complying with site safety plan and work health and safety (WHS) legislation, regulations and codes of practice applicable to workplace operations
- locating on-site electrical sources, underground and overhead services, and assets and identifying associated required safe work practices
- installing safety signage and barricades before commencing work
- safely positioning plant and equipment on site, giving consideration to location of electrical sources, underground and overhead services, and assets.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- environmental requirements relevant to the work site and job task, including:
 - clean-up protection
 - noise and dust management
 - vibration management
 - waste management

- equipment safety requirements, including procedures for accessing and interpreting:
 - SWMS
 - safety data sheets (SDS)
- procedures for materials storage and environmentally friendly waste management
- techniques to read and interpret plans, specifications and drawings
- safe work practices required on construction sites, including:
 - required signage and barricades
 - required personal protective equipment (PPE)
 - site-specific emergency procedures, including:
 - evacuation
 - first aid, including cardiopulmonary resuscitation (CPR)
 - location and use of firefighting equipment
 - techniques for working with electrical sources, services and assets
 - procedures for working safely at heights
- types, characteristics, uses and limitations of plant, tools and equipment used in the work specified in performance evidence.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - PPE, as appropriate to the task
- materials:
 - signage and barricades appropriate to the task and work site
- specifications:
 - verbal or written instructions and task-specific information issued by authorised personnel
 - plans and specifications appropriate to the task
 - SDS appropriate to the tools and equipment used to perform tasks
 - SWMS
- relationships with team members and supervisor:
 - work may be conducted alone or as part of a team
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM3004 Identify and apply information in construction plans, drawings and specifications

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

New unit of competency.

Application

This unit of competency specifies the outcomes required to identify work site details and scope of work requirements from construction plans, drawings and specifications, and to apply that information to the initial scheduling and preparation for the work. Work tasks may relate to different areas of work and can include shopfitting, carpentry, construction and painting.

The unit supports construction workers at the early stages of work when the first site visits are made and work requirements are clarified with the client or project manager. It applies to residential and commercial construction projects.

No licensing, legislative, regulatory, or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Common

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.
1. Prepare for site visit.	<p>1.1. <i>Plans, drawings and specifications</i> for construction work are obtained, checked for currency, including latest amendments as required, and work site location is noted.</p> <p>1.2. Construction plans, drawings and specifications are checked for inclusion of key information required for the work, and items requiring clarification are noted for discussion with relevant personnel.</p> <p>1.3. Work site visit is scheduled with relevant personnel to confirm and clarify scope of works and job-specific details not included on plans, drawings and specifications.</p>
2. Check work site and confirm work requirements.	<p>2.1. Work site is accessed according to client and organisational requirements.</p> <p>2.2. <i>Layout and features</i> of existing site are checked against plans, drawings and specifications, and items requiring clarification and observed differences in features or dimensions are noted and resolved with relevant personnel.</p> <p>2.3. Plans, drawings, specifications and technical details for the work to be completed are confirmed, and items requiring clarification are resolved with relevant personnel.</p> <p>2.4. Amended plans, drawings or specifications and building approval documentation are obtained, as required, and checked for accuracy.</p>
3. Prepare information and resources for individual job	<p>3.1. Work stages and individual job tasks are determined from construction plans, drawings and specifications.</p> <p>3.2. Simple sketch or sketches are prepared for individual tasks.</p>

tasks.

- 3.3. Job tasks are sequenced and scheduled in consultation with client, project manager and other contractors, as required.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none">• draw on past experience of interpreting plans, drawings and specifications when interpreting new construction work documentation.
Numeracy skills to:	<ul style="list-style-type: none">• estimate timeframes for different tasks and apply to scheduling• interpret different scales and ratios on plans and drawings and apply when producing simple sketches with accurate dimensions.
Oral communication skills to:	<ul style="list-style-type: none">• use construction terminology in discussions with site personnel to clarify issues relating to plans, drawings and specifications• use listening and questioning skills and appropriate terminology to elicit information from clients regarding work requirements.
Reading skills to:	<ul style="list-style-type: none">• interpret symbols, shading and notations used on construction plans and architectural drawings.
Problem-solving skills to:	<ul style="list-style-type: none">• assess the nature and scope of task requirements and factor in contingency estimates when scheduling.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Plans, drawings and specifications must include five or more of the following:

- cross sections
- detail plans
- elevations
- finishing schedules
- floor plans
- footings and slab set-outs
- roof framing layout
- site plans
- sectional views
- sub-floor and floor plans
- wall framing plans
- window and door schedules.

Layout and features must include at least four of the following:

- adjacent buildings
- contours and contour lines
- datums
- existing structures
- on-site storage
- power, gas, water and telecommunications services
- reduced levels
- site access and egress points.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM3004 Identify and apply information in construction plans, drawings and specifications

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

New unit of competency.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must also:

- interpret at least five construction plans, drawings and specifications for three different work tasks or three different construction sites
- apply the above information to prepare for work, including preparing information and a simple sketch or sketches for each task.

In doing the above, the person must also confirm the actual dimensions of at least three different elements of buildings by interpreting at least two different scales. Where there are differences in measurements, the person must refer to relevant personnel before starting work.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- essential information to be included in simple sketches for tasks specified in the performance evidence
- processes for arranging work site access
- processes for reporting inaccuracies identified in plans, drawings and specifications
- processes for seeking amendments to inaccurate plans, drawings and specifications
- methods of sequencing and scheduling job tasks
- types and key features of construction plans, drawings and specifications used in construction projects
- methods for representing details of construction requirements on plans, drawings and specifications
- construction terminology and symbols used on plans and drawings and in job specifications.

Assessment Conditions

Suitable assessment of performance requires:

- specifications:
 - plans, drawings and specifications for the three different tasks or three different construction sites specified in the performance evidence
- contingencies:
 - differences in measurements
- physical conditions:
 - access to site or sites represented on the plans and drawings for the work tasks
- relationship with client:
 - consultation with client or client's representative is required.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCCM3005 Calculate costs of construction work

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent unit CPCCCM2003B Calculate and cost construction work.

Application

This unit of competency specifies the outcomes required to estimate materials, overheads, labour and time requirements and establish costs for the provision of products and services for construction work.

The unit supports tradespersons and those in independent construction job roles to cost a construction project or part of a construction project. It applies to construction work on residential and commercial sites.

No licensing, legislative, regulatory, or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Common

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe the performance needed to

- essential outcomes. demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.
1. Gather information.
 - 1.1. Job requirements are determined through discussion with customer or from information supplied.
 - 1.2. ***Plans and specifications*** are accessed and site is inspected to confirm requirements.
 - 1.3. Details of products and services to be provided are developed and checked for availability and fitness for purpose.
 - 1.4. Delivery point and methods of transportation are determined where necessary.
 - 1.5. Details of job tasks are accurately recorded and checked according to workplace procedures.
 - 1.6. Information about material, labour and overhead costs is obtained and checked to be current and accurate.
 2. Estimate materials, labour and time.
 - 2.1. Work, including preparatory tasks, is planned and sequenced to cover all necessary activity.
 - 2.2. ***Types and quantities of materials*** required for work are estimated based on availability, fitness for purpose, and current costs.
 - 2.3. Labour requirements to perform work tasks and complete the job are estimated.
 - 2.4. Time requirements to perform work tasks are accurately estimated and checked with appropriate personnel.
 3. Calculate costs.
 - 3.1. Totals of individual materials, ***labour and overhead costs*** are calculated according to workplace procedures and statutory requirements.
 - 3.2. ***Other project-specific costs*** are identified and calculated according to workplace procedures.
 - 3.3. Total work cost is calculated, including mark-up percentages set by appropriate personnel.

- 3.4. Final cost for work is calculated by applying profit margin according to workplace procedures, and is checked for accuracy.
4. Document and verify details.
- 4.1. Details of costs and charges are clearly and accurately documented according to workplace procedures.
- 4.2. Costs, calculations or other details are verified according to workplace procedures and current costing data.
- 4.3. Costing estimate and materials take-off are prepared for quote.
- 4.4. *Costing documents* are accurately completed for future reference according to workplace procedures.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • draw on experience of estimating labour time requirements and material costs, and apply knowledge to new jobs to be costed.
Oral communication skills to:	<ul style="list-style-type: none"> • confirm requirements with customer • use listening and questioning to clarify any issues.
Reading skills to:	<ul style="list-style-type: none"> • read and interpret material specifications, job safety analyses (JSA) and Australian standards relevant to work to be undertaken.
Writing skills to:	<ul style="list-style-type: none"> • produce accurate and legible written costing information.

- Technology skills to:
- find and interpret information relevant to current costings for materials and labour using simple internet searches
 - use estimating and costing templates and software.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

- Plans and specifications*** must include three or more of the following:
- building codes
 - conceptual and preliminary sketches or drawings
 - environmental requirements relating to the acquisition, use and disposal of materials
 - project brief and scope of works, including relevant project plans and detailed project requirements
 - quotation conditions and terms of contract
 - relevant Australian standards and industry standards.

- Types and quantities of materials*** must include five or more of the following:
- aluminium
 - brick and blockwork
 - cement, sand, aggregates and bonding agents
 - claddings
 - decorative finishes
 - doors, windows and trims
 - fillers
 - fixings and fastenings
 - glazing
 - hardware
 - medium density fibreboard (MDF) or alternative substrate panelling
 - paint
 - prefinished boards and laminates
 - solid surfaces
 - steel
 - tiles
 - timber.

- Labour costs** must include:
- estimation of time for manufacture, delivery, installation or application
 - personal protective equipment (PPE)
 - wages and on-costs for different types of construction workers.
- Overhead costs** must include:
- administration
 - insurance
 - transport
 - use of communication technology.
- Other project-specific costs** must include at least two of the following:
- plant and equipment hire
 - project-related signs
 - site facilities
 - statutory fees and charges
 - transport and delivery charges
 - waste removal fees.
- Costing documents** must include three of the following:
- costing spreadsheets
 - job sheets
 - labour time allocation
 - materials lists and estimates
 - quotation templates
 - take-off sheets.

Unit Mapping Information

CPCCCM2003B Calculate and cost construction work

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCCM3005 Calculate costs of construction work

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent unit CPCCCM2003B Calculate and cost construction work

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must also cost three different construction jobs, where the costing includes:

- estimating quantities of material required
- determining the types and amount of labour required to complete the work
- estimating time required to complete the work
- estimating overheads associated with the work
- totalling all costs and applying profit margin to establish a client quote.

In doing the above work, the person must:

- locate, interpret and apply information, standards and specifications relevant to estimating and costing work
- calculate final cost for the work and prepare a written quotation for each of the work requirements.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- accuracy and detail required in costing estimates for construction work
- construction terminology used in plans and specifications for construction work
- contents and impact of job safety analyses (JSA) and safe work method statements (SWMS) on costing construction work
- environmental and sustainability requirements relevant to the costing being determined
- procedures for applying the Goods and Services Tax (GST) to costings

- procedures for determining wages and overhead costs relevant to a quotation for construction work
- international system of units (SI) of measurements relevant to the construction industry
- process of estimating and costing construction work
- quality requirements of construction projects and their impact on time required for completion
- relevant statutory and authority requirements related to estimating and costing construction work
- sources of information on material requirements and processes for calculating them
- standards applicable to the work being costed, such as Australian standards and those in the National Construction Code
- terms and content of relevant contract documentation to inform estimate.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - calculator
 - computer with internet access
- specifications:
 - plans and specifications for the work to be undertaken
 - costing information
- relationship with client:
 - consultation with client is required.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCLBM3001 Licence to operate a concrete placing boom

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 1.

Revised unit of competency replacing superseded non-equivalent CPCCLBM3001A Licence to operate a concrete placing boom.

Application

This unit of competency specifies the outcomes required to operate concrete placing booms safely. It supports the work of concrete placement workers who are responsible for locating concrete placing booms at the workplace and for setting up and operating the boom to deliver concrete safely and accurately as required.

The concrete placing boom includes a knuckle boom capable of power-operated slewing and luffing to place concrete by way of pumping through a pipeline attached to, or forming part of, the boom of the plant.

The unit includes planning the work, conducting routine plant and equipment checks, setting up and preparing for operation, receiving concrete from the manufacturer, placing concrete, and shutting down and securing the concrete placing boom.

This unit is based on the licensing requirements of Part 4.5 of the *Model Work Health and Safety (WHS) Regulations, High Risk Work*, and meets commonwealth, state and territory high risk work licensing requirements. Any alteration to unit content or outcomes would result in a unit that is not acceptable to WHS/OHS regulators for the purpose of licensing.

Pre-requisite Unit

Nil

Competency Field

Nil

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the range of conditions.

- | | |
|---|---|
| 1. Plan concrete placement work. | 1.1. Concrete placement workplace is confirmed, <i>potential hazards and emergencies are identified</i> , and risk controls are selected according to applicable regulations, the hierarchy of controls, and site and <i>workplace procedures</i> . |
| | 1.2. Type of required concrete placing boom and types, volumes and schedule of concrete delivery to the workplace are confirmed with relevant contractors and suppliers. |
| | 1.3. Tools and equipment, including personal protective equipment, are selected to meet work requirements and checked according to workplace procedures. |
| | 1.4. Workplace <i>methods for communicating</i> between concrete placing boom operator and <i>other workplace personnel</i> are identified and confirmed. |
| | 1.5. Proposed location for setting up concrete placing boom is identified, and access to location and <i>ground suitability are confirmed</i> with <i>relevant personnel</i> . |
| 2. Set up boom and prepare for operation. | 2.1. Location and ground are inspected and checked against advice received from <i>reports and drawings</i> and confirmed as suitable according to workplace procedures. |
| | 2.2. Concrete placing boom is located at workplace, positioned for work application, and outriggers are extended and adjusted to ensure stability according to manufacturer specifications and workplace procedures. |

- 2.3. Pre-start operator checks are conducted according to manufacturer specifications and workplace procedures.
 - 2.4. Concrete placing boom is partially extended to test operation and check function according to manufacturer specifications and workplace procedures.
 - 2.5. Plant safety devices are tested according to manufacturer specifications and workplace procedures.
 - 2.6. Post-start operational checks are carried out according to manufacturer specifications and workplace procedures.
 - 2.7. Concrete delivery system components are positioned securely and safely according to workplace procedures.
 - 2.8. Appropriate *risk control measures* are applied to the concrete placing boom location according to manufacturer specifications and workplace procedures.
 - 2.9. Pumping system is tested and prepared for use according to manufacturer specifications and workplace procedures.
3. Deliver concrete.
- 3.1. Supply of bulk concrete to the hopper is coordinated with supply vehicle operators to ensure safe hopper levels, and hose hand and concreters are advised of pauses and changes in supply as required.
 - 3.2. Concrete placing boom is safely and efficiently operated through the *full range of movements* using remote control or control panel to deliver the concrete as required.
 - 3.3. Risk of collision with other fixed structures and moving plant is monitored and suitable risk control measures are implemented.
 - 3.4. Pump is operated using remote control or control panel to ensure a safe optimum output according to requirements of concreters and to minimise damage to the engine and gears.
 - 3.5. Hand signals are correctly made and interpreted, or instructions over the radio are correctly given and received, according to any workplace procedures.

- 3.6. ***Boom operation is constantly monitored*** to ensure stability of boom and safety of personnel, delivery hose and workplace equipment and structures.
 - 3.7. ***Strategies for managing emergencies*** arising during concrete placement are implemented as required and according to manufacturer specifications, and emergencies are reported in line with workplace procedures.
 - 3.8. Concrete placing boom is safely withdrawn from the work area at completion of delivery task.
4. Shut down and secure concrete placing boom and components.
 - 4.1. Delivery lines and hopper are cleaned out according to manufacturer specifications and workplace procedures.
 - 4.2. Concrete placing boom is stowed according to manufacturer specifications and secured for travel according to plant operation and workplace procedures.
 - 4.3. Outriggers are retracted, stowed and secured for travel according to manufacturer specifications and workplace procedures.
 - 4.4. Plates or packing are stowed and secured for travel according to manufacturer specifications and workplace procedures.
 - 4.5. Concrete placing boom is relocated as required and shut down according to manufacturer specifications and workplace procedures.
 - 4.6. Routine post-operational equipment checks are carried out and recorded according to manufacturer specifications and workplace procedures.
 - 4.7. Defects and damage are reported and recorded and appropriate action is taken according to manufacturer specifications and workplace procedures.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to

performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none">• operate concrete placing booms in different types of workplaces transferring key principles of safe operation to different contexts• improve own performance in the safe and efficient operation of concrete placing booms by incorporating learning from experiences in different workplaces and different conditions.
Numeracy skills to:	<ul style="list-style-type: none">• interpret numerical information, including:<ul style="list-style-type: none">• information regarding concrete supply:<ul style="list-style-type: none">• schedule of delivery• strength and volume of concrete• readings on control and monitoring instruments.
Oral communication skills to:	<ul style="list-style-type: none">• use and interpret vocabulary specific to the construction industry at a level sufficient to communicate with other workplace personnel• use non-verbal feedback to support effective communication• use relevant conventions for the use of mobile communication devices, such as two-way radios.
Reading skills to:	<ul style="list-style-type: none">• interpret documentation that includes technical specificity, including:<ul style="list-style-type: none">• engineering drawings• geotechnical reports• plant operation manuals and manufacturer specifications• workplace procedures.
Writing skills to:	<ul style="list-style-type: none">• accurately record and maintain information relating to the operation of concrete placing booms, including:<ul style="list-style-type: none">• incident reports• vehicle and equipment checking and maintenance records.
Self-management skills to:	<ul style="list-style-type: none">• implement risk control measures• initiate emergency management strategies.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. ***Bold italicised*** wording, if used in the performance criteria, is detailed below.

Identification of potential hazards and emergencies must include consideration of:

- environmental conditions, including:
 - lightning
 - storms
 - wind
- ground stability, including:
 - compaction, especially recently filled trenches
 - condition and structure, including presence of underground spaces
 - slopes
- hazardous materials
- inadequate extension of outriggers
- insufficient lighting
- overhead or underground electrical assets and service pipes, including:
 - identification of overhead electric line hazards and risks
 - relevant limits of approach
 - safety observer zone
 - whether the work requires a permit from the electricity supply authority
- pressurised pipes, hoses and equipment
- risk of collision with other fixed structures and moving plant, including cranes, tower cranes and other concrete placing booms
- workplace visit if insufficient information available from building contractor or other workplace personnel
- traffic, including:
 - pedestrians
 - vehicles
 - plant.

Workplace procedures must include:

- compliance with applicable:
 - commonwealth, state and territory health and safety legislation
 - approved codes of practice
 - manufacturer specifications and recommendations for the operation of the concrete placing boom

- safe work method statements (SWMS)
- workplace-specific instructions
- consideration of relevant standards:
 - Australian standards
 - international technical standards (ISO)
 - industry standards.

Methods for communicating must comply with **appropriate** workplace protocols **and** must include:

- making and interpreting hand signals, including:
 - boom up
 - boom down
 - slew left
 - slew right
 - open or extend boom
 - close or retract boom
 - stop boom
 - start pump speed up
 - slow pump down
 - little bit
 - add water
 - all finished
- using fixed channel mobile communication devices, including selecting transmitting frequencies
- verbal:
 - speaking, including questioning to confirm understanding
 - listening
- written, including signage and symbols.

Other workplace personnel must include:

- concrete placing and supply personnel:
 - concreter
 - form worker
 - hose hand
- operator of other construction plant and equipment
- other personnel working on or visiting the workplace
- workplace supervisor.

Confirmation of ground suitability must include:

- checking that there is no evidence of:
 - backfilled ground
 - soft soils

- underground cavities
- uneven ground
- evidence that the ground is stable and can withstand the weight of the fully loaded concrete placing boom and concrete delivery vehicles
- evidence that the ground is relatively level and there is ample space for extension of outriggers to ensure the security of the boom when fully extended and operational
- identifying the type of ground, including:
 - bitumen
 - concrete
 - hard compacted soil
 - rock.

Relevant personnel must include one or more of the following:

- geotechnical engineer
- principal contractor
- structural engineer
- workplace manager.

Reports and drawings must include one or more the following:

- engineering drawings
- geotechnical reports.

Risk control measures must include:

- adequate lighting
- complying with requirements of permit conditions from electrical supply authority, including:
 - observing the limits of approach
 - maintaining the safety observer zone
- disconnecting electricity or compliance with electrical supply authority requirements
- locking pins, including R clips and lynch pins
- minimising the risk of collision with other operational plant
- moving obstructions
- properly securing load-rated chain to secure the hose to the boom
- setting up concrete placing boom an adequate distance from excavations
- using pedestrian barricades
- using personal protective equipment
- using safety tags on electrical switches or isolators
- using traffic barricades and controlling traffic.

Full range of movements must include:

- folding and unfolding
- raising and lowering
- slewing left and slewing right
- stopping boom.

Monitoring boom operation must include:

- checking:
 - operation of safety devices
 - readings on control panels
 - boom location and movement
 - concrete flow
 - hopper level
- checking stability of concrete placing boom
- listening for abnormal noises.

Strategies for managing emergencies must involve:

- complying with workplace evacuation procedures
- contacting emergency services
- notifying other workplace personnel
- shutting down equipment.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCLBM3001 Licence to operate a concrete placing boom

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 1

Revised unit of competency replacing superseded non-equivalent CPCCLBM3001A Licence to operate a concrete placing boom.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must also be able to provide evidence of the ability to locate, set up, operate and shut down a concrete placing boom for two different concrete placements:

- one of which must involve delivery of concrete where the placement area is not visible to the boom operator and radio communication with the hose hand is essential
- using two types of concrete with different slumps.

For each concrete placement, the person must provide evidence of the ability to:

- comply with commonwealth, state and territory health and safety legislation and regulations
- plan and prepare for concrete placement work, including:
 - conducting a risk assessment of the workplace
 - selecting risk controls according to the hierarchy of control for positioning and safely operating the concrete placing boom
- check location suitability and then position and stabilise the concrete placing boom using outriggers and packing according to plant operation and workplace procedures
- conduct pre-operational checks of plant, boom, pump, safety devices, and control panels according to plant operation and workplace procedures
- operate and control the concrete placing boom, including all functions to the maximum extension, in communication with workplace personnel to deliver concrete as required and according to plant operation and workplace procedures
- monitor concrete supply and pump and boom operation to ensure safe concrete delivery according to workplace procedures

- identify faults and problems with concrete placing boom, including emergencies, and apply appropriate strategies in response according to manufacturer recommendations and workplace procedures
- demonstrate strategies in place for managing the following emergencies that may arise during concrete placement:
 - contact with electric lines
 - failure or loss of control of the boom
 - instability of concrete placing unit
 - pipe or hose blockage or blow-out
 - failure of equipment, including hydraulic system
 - severe environmental conditions, including wind, lightning and storms
- shut down concrete placing boom in line with established safety procedures:
 - idle engine to stabilise temperature
 - disengage pump
 - turn off engine
 - remove key from ignition
 - secure plant according to manufacturer specifications
 - secure boom according to relevant manufacturer specifications and workplace procedures.

Knowledge Evidence

A person demonstrating competency in this unit must be able to demonstrate knowledge of:

- commonwealth, state and territory health and safety legislation and approved codes of practice relevant to operating a concrete placing boom
- Australian and industry standards relevant to operating a concrete placing boom
- characteristics and properties of concrete required for different elements of buildings
- concreting placing procedures, which must include requirements for priming material, volume of concrete required, and consistency and amount of concrete in the delivery line
- features and functions of concrete delivery system components:
 - adaptors
 - boom
 - couplings
 - hose
 - lines
 - locking pins, including R clips and lynch pins
- hand signals used in concrete placement operations
- manufacturer specifications, site and workplace procedures relevant to operating concrete placing booms
- essential safety procedures for ensuring stability of concrete placing boom:
 - deploying outriggers according to manufacturer specifications
 - establishing correct size plates or packing

- correctly positioning plates or packing
- checking plant is level and well-supported
- procedures for maintaining workplace records and information
- protocols for using mobile communication devices on construction workplaces
- routine problems, hazards and emergencies that could arise during concrete placing boom operations and strategies for managing them, including application of the hierarchy of controls
- types of ground and ground conditions at workplace that are:
 - suitable for set-up and operation of concrete placing boom
 - unsuitable for set-up and operation of concrete placing boom.

Assessment Conditions

Assessment must be conducted in the English language.

Assessment of performance must be undertaken in the workplace and/or under realistic workplace conditions that typically reflect:

- the use of full-scale equipment,
- performing tasks/activities within the same timelines expected in the workplace, and
- standard and authorised work practices, safety requirements and environmental constraints.

All practical assessment must be undertaken on a mobile concrete placing boom.

The use of simulators in the assessment of this unit of competency is not acceptable.

Accredited assessors are responsible for ensuring that candidates have access to operational workplaces with personnel to undertake hose hand and concreting responsibilities, and access to:

- equipment in safe operating condition:
 - mobile communication devices, including two-way radios
 - concrete placing boom and associated controls and equipment, including outriggers and packing
 - personal protective equipment
 - plant safety devices with the following features:
 - audible and visual reversing devices
 - horns and sirens
 - lights
 - safety interlocks

- tools and equipment required for pre-start and post-operational equipment checking, cleaning and maintenance
- materials:
 - concrete
 - workplace documentation to be completed
- contingencies:
 - other plant, including cranes, working at the workplace
- specifications:
 - manufacturer specifications
 - work instructions
 - workplace procedures
 - specifications for concrete delivery
 - relevant workplace technical reports and drawings
- physical conditions:
 - suitable terrain and weather for concrete placement operations.

Assessor requirements

As a minimum assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

In addition, assessment must be conducted by an assessor accredited for this high risk work (HRW) licence class in the commonwealth, state or territory jurisdiction where the licence application will be made (i.e. an accredited assessor authorised by a commonwealth, state or territory WHS/OHS regulator).

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3014 Install bulk insulation and pliable membrane products

Modification History

Release 1. This version first released with CPC Construction, Plumbing and Services Training Package Version 3.0

Application

This unit specifies the outcomes required to safely undertake floor, wall and ceiling insulation installation work using bulk insulation and pliable membrane products. The unit includes identifying legislative, regulatory, and job requirements; planning and preparing to install insulation; installing insulation; and, completing installation, including preparation of a Statement of Insulation Installation.

The unit requires a person undertaking this work to comply with legislative, regulatory, safety and technical, organisational and site requirements while planning and carrying out the work.

The unit applies to insulation installers working primarily in residential buildings, although there may be application in some instances in commercial buildings.

The work context involves working at heights, working in enclosed areas, dust control and mitigation of risk from asbestos.

At the time of endorsement there was no requirement by any state or territory regulator for insulation installers to complete this unit for licensing or registration purposes.

Pre-requisite Unit

Nil

Competency Field

Plasterboard

Unit Sector

Construction

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1. Define job Requirements

- 1.1. Identify scope of required installation activities through review of job requirements and inspection of work site.
- 1.2. Assess and control site risks and *hazards* and communicate and clarify any issues with supervisor.
- 1.3. Identify requirements of workplace procedures for responding to the presence of vermin, asbestos, and dust within the workspace.
- 1.4. Identify required safety equipment and processes by review of work order, risk assessment, safety data sheets (SDS), safe use instruction sheet (SUIS) and *safety legislation*.
- 1.5. Identify and review requirements of *Australian Standards* (AS) AS 4200.2 for pliable membrane wall insulation and AS 3999 relating to electrical inspections, safety and installation activities.
- 1.6. Identify and review workplace *environmental requirements* that relate to the installation activities.
- 1.7. Identify and review workplace *emergency response and evacuation procedures* as they apply to the site of the installation activities.
- 1.8. Identify and review *work instructions and specifications* that relate to the installation activities.

2. Plan and prepare for installing insulation.

- 2.1. Undertake an electrical risk assessment and prepare an electrical risk assessment report.
- 2.2. Document and submit for approval a *Safe Work Method Statement* (SWMS) for the worksite, incorporating identified risks and hazards, the outcomes of the electrical risk assessment, electrical isolation procedure and the hazard hierarchy of control.
- 2.3. Plan job incorporating identified requirements of work order, work site, safety legislation, AS 3999, environmental requirements, work instructions and specifications and SWMS.

- 2.4. Confirm that *insulating material* and *insulation requirements* meet work instructions and thermal and acoustic performance specifications.
 - 2.5. Put in place all requirements of the SWMS.
 - 2.6. Select *personal protective equipment* (PPE), *tools, equipment and associated materials*, check for serviceability and report for repair or replacement where unserviceable.
3. Install floor, wall and ceiling insulation.
 - 3.1. Isolate worksite electrical circuits and install safety signage and lock-out tag in accordance with the SWMS.
 - 3.2. Undertake installation work in accordance with the SWMS.
 - 3.3. Undertake installation work using approved methods of measurement and cutting of insulating material.
 - 3.4. Undertake installation work in accordance with requirements of AS 3999 for recessed luminaries and electrical cable and AS 4200.2 for wall applications where pliable building membranes are required.
 - 3.5. Undertake installation work in accordance with manufacturers' specifications and minimise waste.
 - 3.6. Install insulation without damage or distortion of the surrounding environment, electrical and other services and in a manner that maximises safety of self and others.
 - 3.7. Conduct final inspection to ensure installed floor, wall and ceiling insulation conforms to work instructions, AS 3999 and manufacturers' specifications.
4. Complete installation.
 - 4.1. Clean work area and dispose of, re-use or re-cycle *materials* following workplace and environmental procedures.
 - 4.2. Clean, check, maintain, and store tools and equipment in accordance with manufacturer specifications.
 - 4.3. Document details of malfunctions, faults, wear or damage to tools and equipment and report for repair or replacement.
 - 4.4. Document, distribute, and store Statement of Insulation Installation.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Not Applicable

Unit Mapping Information

Supersedes and is not equivalent to CPCCPB3014A - Install batt insulation products

Links

An Implementation Guide to this Training Package is available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3014 Install bulk insulation and pliable membrane products

Modification History

Release 1. This Version first released with CPC Construction, Plumbing and Services Training Package Version 3.0

Performance Evidence

A person who demonstrates competency in this unit must;

1. Conduct an electrical risk assessment and prepare an electrical risk assessment report.
2. Plan and install:
 - a) bulk insulation in:
 - a floor space with a minimum area of 9 square metres;
 - wall frames a minimum of 2400mm high by 3 lineal metres; and
 - a ceiling space with a minimum area of 9 square metres.
 - b) pliable membrane to:
 - wall frames a minimum of 2400mm high by 3 lineal metres.

The person must provide evidence from each of the above activities that:

- satisfies the elements and associated performance criteria and foundation skills of this unit; and
- confirms the activities to be in accordance with legislative and workplace requirements specified in Knowledge Evidence.

Knowledge Evidence

A person demonstrating competency in this unit must provide evidence to demonstrate knowledge and understanding of the following knowledge evidence items.

Each item defines the type and depth of the knowledge required to meet the demands of one or more performance criteria:

- Jurisdictional Workplace Health and Safety and environmental legislation and regulations
- Workplace requirements for undertaking all aspects of insulation and pliable membrane installation, including interpreting work orders and reporting problems
- Procedures to safely use equipment, shift and handle products and materials, and work at heights and in enclosed areas to install floor, wall and ceiling insulation in common situations
- Organisational procedures for responding to the presence of pests/vermin, asbestos and dust within an installation workspace
- Risks of asbestos containing materials (ACM), and their use in common building

materials used in floor, wall and ceiling spaces

- Key requirements of legislation, regulation and building codes related to floor, wall and ceiling insulation
- Tools and equipment prohibited for use near identified asbestos-containing materials (ACM)
- Appropriate PPE and its use in floor, wall and ceiling insulation installation
- Safety data sheets (SDS) and Safe Work Method Statements (SWMS) commonly used in floor, wall and ceiling insulation installation
- Common health and safety risks associated with handling floor, wall and ceiling insulation products
- Emergency response and evacuation procedures relating to floor, wall and ceiling insulation installation
- Work instructions and specifications relating to floor, wall and ceiling insulation installation
- Electrical risk assessment process, hazard identification and reporting as per Australian Standard (AS) AS 3999 for common floor, wall and ceiling insulation installation
- Hierarchy of hazard control as it relates to floor, wall and ceiling insulation installation
- Organisational requirements and procedures relating to floor, wall and ceiling insulation installation, including requirements for a systematic approach to planning own work
- Key requirements of Australian Standards - relating to floor, wall and ceiling information, including:
 - AS/NZS 4859.1 Materials for the thermal insulation of buildings - Testing and labelling of insulation;
 - AS 4200.2 Pliable building membranes – Installation; and
 - AS/NZS 3000 (with Amd 1) Wiring Rules, in particular Clause 4.5.2.3.
- Requirements relating to floor, wall and ceiling insulation installation from AS 3999 for:
 - personal safety;
 - electrical risk assessment;
 - approved processes; and
 - energy efficiency – new products and technologies.
- Specifications of common floor, wall and ceiling installation materials, including R rating and dimensions
- Types, safety, characteristics, uses and limitations of common floor, wall and ceiling insulation installation tools and equipment
- Type and purpose of lock out tags in floor, wall and ceiling insulation installation
- Requirements of AS 3999 for recessed luminaires and electrical cable, in floor, wall and ceiling insulation installation including:
 - operating temperature limit of electrical cables;
 - effect on cables partially surrounded by thermal insulation and fully surrounded by thermal insulation;
 - common wiring systems used in domestic premises indicating the age of the

- installation;
- clearance and restraint methods to retain thermal insulation from recessed down lights and ancillary equipment; and
- electrical hazards in floor, wall and roof spaces, including unenclosed connections, unenclosed conductors, damaged cable sheaths and exposed conductors.
- Product and process knowledge to identify common problems and predict consequences in floor, wall and ceiling insulation installation
- Quality requirements for installation of floor, wall and ceiling insulation material including thermal and acoustic performance
- Energy efficiency of common floor, wall and ceiling insulation material types
- Methods for measuring and cutting floor, wall and ceiling insulation material
- Procedures for conducting a final inspection of a floor, wall and ceiling insulation installation
- Workplace procedures for environmental requirements for waste, including waste management and recycling relating to floor, wall and ceiling insulation installation
- Procedures for cleaning, checking and maintaining tools and equipment used for floor, wall and ceiling insulation installation
- Procedures for dealing with faulty floor, wall and ceiling insulation installation tools and equipment
- Procedures for documenting, distributing and storing Statements of Insulation Installation incorporating the format and required information as defined in AS 3999 – Appendix D

Assessment Conditions

As a minimum, assessors must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Assessment of performance must be undertaken in the workplace and/or under realistic workplace conditions which typically reflect:

- the use of industry standard equipment;
- performing tasks/activities to the level of proficiency and within timelines that would be expected in a workplace; and
- following standard and authorised work practices, safety requirements and environmental constraints.

Assessment must include work in enclosed areas with an access/egress point (e.g. manhole) and ceiling space obstructions including roof framing, electrical cabling and recessed luminaries.

Assessors are responsible for ensuring that candidates have access to specifications for:

- conducting an electrical risk assessment and preparing an electrical risk assessment report;
- a floor installation task in a floor space with a minimum area of 9 square metres;

- a wall installation task with wall frames a minimum of 2400mm high by 3 lineal metres;
- a ceiling installation task in a ceiling space with a minimum area of 9 square metres ; and
- a wall-wrap installation task for pliable membrane to wall frames a minimum of 2400mm high by 3 lineal metres.
- floor spaces;
- wall frames;
- ceiling spaces;
- materials and tools;
- relevant sections of the Australian Standards/National Construction Code;
- relevant sections of WHS/OHS legislation;
- electrical risk assessment report;
- SWMS template;
- Statement of Insulation Installation template;
- PPE; and
- technical documentation.

Links

An Implementation Guide to this Training Package is available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCPB3027 Install ceiling insulation products

Modification History

Release 1. This Version first released with CPC Construction, Plumbing and Services Training Package Version 3.0.

Application

This unit specifies the outcomes required to safely undertake only ceiling insulation installation work using bulk insulation products. The unit includes identifying legislative, regulatory, and job requirements; planning and preparing to install insulation; installing insulation; and, completing installation, including preparation of a Statement of Insulation Installation.

The unit requires a person undertaking this work to comply with legislative, regulatory, safety and technical, organisational and site requirements while planning and carrying out the work.

The unit applies to insulation installers working primarily in residential buildings, although there may be application in some instances in commercial buildings.

Persons undertaking this unit should be aware that coverage of this unit extends only to ceiling insulation and does not include the broader context of wall and floor insulation installation.

At the time of endorsement there was no requirement by any state or territory regulator for insulation installers to complete this unit for licensing or registration purposes.

Pre-requisite Unit

Nil

Competency Field

Plasterboard

Unit Sector

Construction

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Define job requirements.	<p>1.1 Identify scope of required installation activities through review of job requirements and inspection of work site.</p> <p>1.2. Assess and control site risks and <i>hazards</i> and communicate and clarify any issues with supervisor.</p> <p>1.3. Identify requirements of workplace procedures for responding to the presence of vermin, asbestos, and dust within the workspace.</p> <p>1.4. Identify required safety equipment and processes by review of work order, risk assessment, Safety Data Sheets (SDS), Safe Use Instruction Sheet (SUIS) and <i>safety legislation</i>.</p> <p>1.5. Identify and review requirements of <i>Australian Standard</i> (AS) AS3999 relating to electrical inspections, safety and installation activities.</p> <p>1.6. Identify and review workplace <i>environmental requirements</i> that relate to the installation activities.</p> <p>1.7. Identify and review workplace <i>emergency response and evacuation procedures</i> as they apply to the site of the installation activities.</p> <p>1.8. Identify and review <i>work instructions and specifications</i> that relate to the installation activities.</p>
2. Plan and prepare for installing insulation.	<p>2.1. Undertake an electrical risk assessment and prepare an electrical risk assessment report.</p> <p>2.2. Document and submit for approval a <i>Safe Work Method Statement</i> (SWMS) for the worksite, incorporating identified risks and hazards, the outcomes of the electrical risk assessment, electrical isolation procedure and the hazard hierarchy of control.</p> <p>2.3. Plan job incorporating identified requirements of work order, work site, safety legislation, AS 3999, environmental requirements, work instructions and specifications and SWMS.</p> <p>2.4. Confirm that <i>insulating material</i> and <i>insulation requirements</i> meet work instructions and thermal and acoustic performance specifications.</p>

- 2.5. Put in place all requirements of the SWMS.
- 2.6. Select **Personal Protective Equipment (PPE), tools, equipment and associated materials**, check for serviceability and report for repair or replacement where unserviceable.
3. Install ceiling insulation.
 - 3.1. Isolate worksite electrical circuits and install safety signage and lock-out tag in accordance with the SWMS.
 - 3.2. Undertake installation work in accordance with the SWMS.
 - 3.3. Undertake installation work using approved methods of measurement and cutting of **insulating material**.
 - 3.4. Undertake installation work in accordance with requirements of AS 3999 for recessed luminaries and electrical cable.
 - 3.5. Undertake installation work in accordance with manufacturers' specifications and minimise waste.
 - 3.6. Install insulation without damage or distortion of the surrounding environment, electrical and other services and in a manner that maximises safety of self and others.
 - 3.7. Conduct final inspection to ensure installed ceiling insulation conforms to work instructions, AS 3999 and manufacturers' specifications.
4. Complete installation.
 - 4.1. Clean work area and dispose of, re-use or re-cycle **materials** following workplace and environmental procedures.
 - 4.2. Clean, check, maintain and store tools and equipment in accordance with manufacturer specifications.
 - 4.3. Document details of malfunctions, faults, wear or damage to tools and equipment and report for repair or replacement.
 - 4.4. Document, distribute and store Statement of Insulation Installation.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Not Applicable

Unit Mapping Information

Supersedes and is not equivalent to CPCCPB3027A - Install ceiling insulation

Links

An Implementation Guide to this Training Package is available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCPB3027 Install ceiling insulation products

Modification History

Release 1. This Version first released with CPC Construction, Plumbing and Services Training Package Version 3.0.

Performance Evidence

A person who demonstrates competency in this unit must;

1. Conduct an electrical risk assessment and prepare an electrical risk assessment report.
2. Plan and install:
 - a. bulk insulation in:
 - a ceiling space with a minimum area of 9 square metres.

The person must provide evidence from each of the above activities that:

- satisfies the elements and associated performance criteria and foundation skills of this unit; and
- confirms the activities to be in accordance with legislative and workplace requirements specified in Knowledge Evidence.

Knowledge Evidence

A person demonstrating competency in this unit must provide evidence to demonstrate knowledge and understanding of the following knowledge evidence items. Each item defines the type and depth of the knowledge required to meet the demands of one or more performance criteria.

- Jurisdictional Workplace Health and Safety and environmental legislation and regulations
- Workplace requirements for undertaking all aspects of ceiling insulation installation, including interpreting work orders and reporting problems
- Procedures to safely use equipment, shift and handle products and materials, and work at heights and in enclosed areas to install ceiling insulation in common situations
- Organisational procedures for responding to the presence of pests/vermin, asbestos and dust within an installation workspace
- Risks of asbestos containing materials (ACM), and their use in common building materials used in ceiling spaces
- Key requirements of legislation, regulation and building codes related to ceiling insulation

- Tools and equipment prohibited for use near identified asbestos-containing materials (ACM)
- Appropriate PPE and its use in ceiling insulation installation
- Safety data sheets (SDS) and Safe Work Method Statements (SWMS) commonly used in ceiling insulation installation
- Common health and safety risks associated with handling ceiling insulation products
- Emergency response and evacuation procedures relating to ceiling insulation installation
- Work instructions and specifications relating to ceiling insulation installation
- Electrical risk assessment process, hazard identification and reporting as per Australian Standard (AS) AS 3999 for common ceiling insulation installation
- Hierarchy of hazard control as it relates to ceiling insulation installation
- Organisational requirements and procedures relating to ceiling insulation installation, including requirements for a systematic approach to planning own work
- Key requirements of Australian Standards relating to ceiling insulation, including:
 - AS/NZS 4859.1 Materials for the thermal insulation of buildings - Testing and labelling of insulation; and
 - AS/NZS 3000 (with Amd 1) Wiring Rules, in particular Clause 4.5.2.3.
- Requirements relating to ceiling insulation installation from AS 3999 for:
 - personal safety;
 - electrical risk assessment;
 - approved processes; and
 - energy efficiency – new products and technologies.
- Specifications of common ceiling installation materials, including R rating and dimensions
- Types, safety, characteristics, uses and limitations of common ceiling insulation installation tools and equipment
- Type and purpose of lock out tags in ceiling insulation installation
- Requirements of AS 3999 for recessed luminaires and electrical cable, in ceiling insulation installation including:
 - operating temperature limit of electrical cables;
 - effect on cables partially surrounded by thermal insulation and fully surrounded by thermal insulation;
 - common wiring systems used in domestic premises indicating the age of the installation;
 - clearance and restraint methods to retain thermal insulation from recessed down lights and ancillary equipment; and
 - electrical hazards in roof spaces, including unenclosed connections, unenclosed conductors, damaged cable sheaths and exposed conductors.
- Product and process knowledge to identify common problems and predict consequences in ceiling insulation installation
- Quality requirements for installation of ceiling insulation material including thermal and

acoustic performance

- Energy efficiency of common ceiling insulation material types
- Methods for measuring and cutting ceiling insulation material
- Procedures for conducting a final inspection of a ceiling insulation installation
- Workplace procedures for environmental requirements for waste, including waste management and recycling relating to ceiling insulation installation
- Procedures for cleaning, checking and maintaining tools and equipment used for ceiling insulation installation
- Procedures for dealing with faulty ceiling insulation installation tools and equipment
- Procedures for documenting, distributing and storing Statements of Insulation Installation incorporating the format and required information as defined in AS 3999 – Appendix D

Assessment Conditions

As a minimum, assessors must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Assessment of performance must be undertaken in the workplace and/or under realistic workplace conditions which typically reflect:

- the use of industry standard equipment;
- performing tasks/activities to the level of proficiency and within timelines that would be expected in a workplace; and
- following standard and authorised work practices, safety requirements and environmental constraints.

Assessment must include work in enclosed areas with an access/egress point (e.g. manhole) and ceiling space obstructions including roof framing, electrical cabling and recessed luminaries.

Assessors are responsible for ensuring that candidates have access to specifications for:

- conducting an electrical risk assessment and preparing an electrical risk assessment report; and
- a ceiling installation task in a ceiling space with a minimum area of 9 square metres.
- ceiling spaces;
- materials and tools;
- relevant sections of the Australian Standards/National Construction Code;
- relevant sections of WHS/OHS legislation;
- electrical risk assessment report;
- SWMS template;
- Statement of Insulation Installation template;
- PPE; and
- technical documentation.

Links

An Implementation Guide to this Training Package is available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF2003 Cut and bend materials using oxy-LPG equipment

Modification History

Release 1.

Supersedes and equivalent to CPCCSF2003A Cut and bend materials using oxy-LPG equipment.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Application

This unit of competency specifies the skills and knowledge required to heat, cut and bend construction materials using oxy-LPG equipment.

It includes:

- planning and preparing for the work
- setting up and testing equipment
- cutting material
- heating and bending material
- shutting down equipment
- completing clean-up activities.

It also includes the use of oxy-LPG-acetylene equipment to cut and bend materials for steelfixing applications. It does not involve specialist welding techniques.

It applies to workers working alone or as a member of a team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
<p>1. Plan and prepare to cut and bend materials using oxy-LPG equipment.</p>	<p>1.1 Review and clarify task to cut and bend materials using oxy-LPG equipment.</p> <p>1.2 Review task specifications and check to make sure they are in accordance with legislation, regulations and codes of practice.</p> <p>1.3 Review work health and safety (WHS) requirements for the task in accordance with safety plans and policies.</p> <p>1.4 Identify safety signage and barricade requirements.</p> <p>1.5 Review environmental requirements for the task in accordance with environmental plans and legislative requirements.</p> <p>1.6 Select plant, tools and equipment, check for serviceability and rectify or report any faults.</p> <p>1.7 Calculate material quantity requirements.</p> <p>1.8 Acquire materials for the task and locate them safely ready for use.</p>
<p>2. Set up and test oxy-LPG equipment.</p>	<p>2.1 Erect identified safety signage and barricades, and fit personal protective equipment (PPE).</p> <p>2.2 Select appropriate fire extinguisher and locate it to be readily accessible prior to and during operations.</p> <p>2.3 Attach regulators to oxy and acetylene bottles in accordance with manufacturers' specifications and WHS regulations.</p> <p>2.4 Purge lines to manufacturers' specifications prior to lighting up.</p> <p>2.5 Test equipment for leaks and either undertake corrective action or report faults.</p> <p>2.6 Select appropriate pressures and cutting tips in accordance with material to be cut and manufacturers' specifications.</p>
<p>3. Cut material with oxy-LPG equipment.</p>	<p>3.1 Mark material accurately and secure or clamp ready for cutting.</p> <p>3.2 Light torch in accordance with manufacturer's specifications.</p> <p>3.3 Adjust setting of flame for cutting to manufacturers' specifications.</p> <p>3.4 Adopt correct cutting position to set-out mark during cutting.</p>
<p>4. Heat and bend material using oxy-LPG equipment.</p>	<p>4.1 Mark material accurately and secure or clamp ready for bending.</p> <p>4.2 Light torch in accordance with manufacturer's specifications.</p>

	<p>4.3 Apply heat to specified material and minimise weakening effects of the heating process.</p> <p>4.4 Bend material to specification and cool appropriately.</p>
5. Shut-down oxy-LPG equipment.	<p>5.1 Switch off torch in accordance with manufacturers' specifications.</p> <p>5.2 Shut off gas supply in accordance with manufacturers' specifications.</p>
6. Clean up after cutting, heating and bending materials using oxy-LPG equipment.	<p>6.1 Clear work area and dispose of, re-use or recycle materials in accordance with legislation, regulations, codes of practice and task requirements.</p> <p>6.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' specifications and workplace requirements.</p>

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

- oral communication skills to:
 - use questioning to identify and confirm requirements
 - discuss cause of problems
 - report work site hazards, including faults in tools, equipment and materials
 - provide feedback.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF2003A Cut and bend materials using oxy-LPG equipment.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF2003 Cut and bend materials using oxy-LPG equipment

Modification History

Release 1.

Supersedes and equivalent to CPCCSF2003A Cut and bend materials using oxy-LPG equipment.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Performance Evidence

To demonstrate competency in this unit, a person must use both oxy-acetylene and LPG systems to:

- cut to specification five bars with different sizes up to and including 36 mm
- heat and bend a minimum of three bars to specification including at least one 36 mm bar.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- jurisdictional work health and safety (WHS) and environmental legislation and regulations relating to cutting, heating and bending material using oxy-LPG equipment, including:
 - job safety analyses (JSAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - environmental and work site safety plans
- requirements of Australian Standards and the National Construction Code (NCC) relating to cutting, heating and bending material using oxy-LPG equipment
- workplace requirements for all aspects of cutting, heating and bending material using oxy-LPG equipment, including interpreting work orders and reporting problems
- interpretation of plans, drawings and specifications
- processes for the calculation of material requirements from specifications
- scope of work for cutting, heating and bending material using oxy-LPG equipment, including:

- cutting up of waste for salvage
- cutting reinforcement steel
- cutting holes in plate
- bending reinforcement steel
- types and properties of materials, including:
 - cutting consumables
 - deformed bars
 - mesh sheets of deformed bars
 - mesh sheets of plain bars
 - plain rods
- oxy acetylene and LPG heating and cutting equipment types, characteristics, uses and limitations and set-up and operating techniques, including for:
 - cylinders
 - regulators
 - gas tubing
 - cutting blowpipes
 - flint lighters
 - measuring tapes and rules
 - clamps and support stands
- types, characteristics, uses and limitations of tools, equipment and materials required for cutting, heating and bending material using oxy-LPG equipment, including:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements
- techniques for cutting, heating and bending material using oxy-LPG equipment
- quality requirements relevant to cutting, heating and bending material using oxy-LPG equipment
- processes, materials and equipment for cutting, heating and bending material using oxy-LPG equipment
- requirements for cleaning up work area and tools, materials storage and environmentally friendly waste management.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- work sites and specifications for cutting, heating and bending tasks
- appropriate documents, materials, tools, equipment and PPE currently used in industry
- requirements of appropriate sections of legislation and regulations
- relevant workplace policies and procedures.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF2004 Place and fix reinforcement materials

Modification History

Release 1.

Supersedes and equivalent to CPCCSF2004A Place and fix reinforcement materials.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Application

This unit of competency specifies the skills and knowledge required to place and fix reinforcement for concrete work as part of construction processes.

It includes:

- planning and preparing for the work
- final preparation for placement
- placing and fixing reinforcement
- checking the reinforcement
- completing clean-up activities.

It applies to concreters working as members of a team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1. Plan and prepare to place and fix reinforcement	1.1 Review and clarify task to place and fix reinforcement materials. 1.2 Review task specifications and check to make sure they are in

materials.	<p>accordance with legislation, regulations and codes of practice.</p> <p>1.3 Review work health and safety (WHS) requirements for the task in accordance with safety plans and policies.</p> <p>1.4 Identify safety signage and barricade requirements.</p> <p>1.5 Review environmental requirements for the task in accordance with environmental plans and legislative requirements.</p> <p>1.6 Select plant, tools and equipment, check for serviceability and rectify or report any faults.</p> <p>1.7 Check stock of reinforcement materials for correct type, quality and quantities against reinforcement schedule and details in plans/specifications.</p> <p>1.8 Acquire materials for the task and locate them safely ready for use.</p>
2. Prepare for reinforcement placement.	<p>2.1 Erect identified safety signage and barricades, and fit personal protective equipment (PPE).</p> <p>2.2 Check formwork for completion and conformity to receive reinforcement.</p> <p>2.3 Cut and bend reinforcement bars to required set out and plans and specifications.</p> <p>2.4 Tie bars to designed configuration from plans and specifications.</p> <p>2.5 Cut reinforcement sheets to required sizes.</p> <p>2.6 Attach stiffening rods to panels as required to facilitate handling processes.</p> <p>2.7 Locate bar chairs and spacers to requirements of reinforcement schedule, plans and specifications.</p>
3. Place and fix reinforcement.	<p>3.1 Place fabric reinforcement sheets into position in accordance with engineering drawings and specifications.</p> <p>3.2 Locate and position reinforcement bars in accordance with engineering drawings and specifications.</p> <p>3.3 Locate and place reinforcement using bar chairs, ligatures and spacers in accordance with engineering drawings and specifications.</p> <p>3.4 Support and secure reinforcement material into position in accordance with engineering drawings and specifications.</p> <p>3.5 Secure cast-in items to reinforcement in accordance with engineering drawings and specifications.</p> <p>3.6 Cover and protect ends of protruding reinforcement material in accordance with plans and specifications.</p>

4. Check reinforcement prior to concrete pour.	<p>4.1 Check location and position of reinforcement, and of fixing ties to reinforcement for accuracy.</p> <p>4.2 Check depth of coverage, clearance, spacing and overlap of reinforcement material in accordance with engineering drawings and job specification.</p>
5. Clean up after placing and fixing reinforcement materials.	<p>5.1 Clear work area and dispose of, re-use or recycle materials in accordance with legislation, regulations, codes of practice and task requirements.</p> <p>5.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturers' specifications and workplace requirements.</p>

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

- oral communication skills to:
 - use questioning to identify and confirm requirements
 - discuss cause of problems
 - report work site hazards, including faults in tools, equipment and materials
 - provide feedback.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF2004A Place and fix reinforcement materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF2004 Place and fix reinforcement materials

Modification History

Release 1.

Supersedes and equivalent to CPCCSF2004A Place and fix reinforcement materials.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Performance Evidence

To demonstrate competency in this unit, a person must place and fix reinforcement materials on a minimum of three different jobs, each including deformed bars, rods and mesh sheets.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- jurisdictional work health and safety (WHS) and environmental legislation and regulations relating to placing and fixing reinforcement materials, including:
 - job safety analyses (JSAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - environmental and work site safety plans
- requirements of Australian Standards and the National Construction Code (NCC) relating to placing and fixing reinforcement materials
- workplace requirements for all aspects of placing and fixing reinforcement materials, including interpreting work orders and reporting problems
- reinforcement materials, including:
 - bar chairs
 - deformed bars
 - ligatures
 - mesh sheets of deformed bars
 - mesh sheets of plain bars
 - plain rods

- spacer/spreader assemblies
- wire ties
- uses, care and limitations of tools and equipment for placing and fixing reinforcement materials, including:
 - bolt cutters
 - measuring tapes and rules
 - mesh guillotines
 - reinforcement benders
 - tie wire reels
 - wire nippers
- types, characteristics, uses and limitations of tools, equipment and materials required for placing and fixing reinforcement materials, including:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements
- techniques for placing and fixing reinforcement materials
- quality requirements relevant to placing and fixing reinforcement materials
- processes, materials and equipment for placing and fixing reinforcement materials
- types and applications of reinforcement materials
- requirements for cleaning up work area and tools, materials storage and environmentally friendly waste management.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- work sites and specifications for placing and fixing reinforcement materials
- appropriate documents, materials, tools, equipment and PPE currently used in industry
- requirements of appropriate sections of legislation and regulations
- relevant workplace policies and procedures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSF3001 Apply reinforcement schedule

Modification History

Release 1.

Supersedes and equivalent to CPCCSF3001A Apply reinforcement schedule.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Application

This unit of competency specifies the skills and knowledge required to interpret a reinforcement schedule to confirm and locate materials to support construction activities.

It includes:

- planning and preparing for work
- reading and interpreting the schedule
- using the schedule to confirm and locate materials for construction use, and to provide information to others on site.

It applies to steelfixers, concreters and construction workers working as members of a team with at least a moderate degree of autonomy. They would be expected to complete routine activities without close supervision.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1. Plan and prepare to apply	1.1 Review and clarify task involving application of reinforcement schedule.

reinforcement schedule.	<p>1.2 Identify elements of structure from project construction schedule and task drawings.</p> <p>1.3 Review work health and safety (WHS) requirements for the task in accordance with safety plans and policies.</p> <p>1.4 Review environmental requirements for the task in accordance with environmental plans and legislative requirements.</p>
2. Read and interpret reinforcement schedule.	<p>2.1 Confirm structural element to be constructed from site and structural detail drawings.</p> <p>2.2 Read reinforcement schedule to identify the appropriate reinforcement type for the structural element.</p> <p>2.3 Determine number of reinforcement pieces/sheets from structural detail drawings.</p> <p>2.4 Identify and report discrepancies in coding and numbering.</p>
3. Check contents of reinforcement material bundles.	<p>3.1 Check content of reinforcement material bundles for conformity to schedule and proposed structural element.</p> <p>3.2 Investigate any discrepancies between schedule and actual material quantities, and resolve or report to relevant personnel.</p> <p>3.3 Investigate any discrepancies between schedule and actual material shape, size or length and resolve or report to relevant personnel.</p> <p>3.4 Identify, segregate and report any cranked or bent items of reinforcement material.</p> <p>3.5 Mark schedule where content conforms to schedule and structural element requirements.</p>
4. Locate reinforcement for element construction.	<p>4.1 Mark and place reinforcement ready for transportation to element location.</p> <p>4.2 Arrange transport of reinforcement to structural location for placement and fixing.</p>
5. Communicate reinforcement schedule information.	<p>5.1 Communicate job sequencing schedule detail to steel fixers and team members to ensure efficient work practices.</p> <p>5.2 Record changes to job sequencing schedule in accordance with site requirements.</p> <p>5.3 Identify work completion procedures and notify relevant personnel when finished, in accordance with site requirements.</p>

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

- oral communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, and share information
 - follow instructions.

Unit Mapping Information

Supersedes and is equivalent to CPCCSF3001A Apply reinforcement schedule.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSF3001 Apply reinforcement schedule

Modification History

Release 1.

Supersedes and equivalent to CPCCSF3001A Apply reinforcement schedule.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Performance Evidence

To demonstrate competency in this unit, a person must apply the reinforcement schedule in a minimum of two different construction sites.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- jurisdictional work health and safety (WHS) and environmental legislation and regulations relating to applying reinforcement schedule, including:
 - job safety analyses (JSAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - environmental and work site safety plans
- requirements of Australian Standards and the National Construction Code (NCC) relating to applying reinforcement schedule
- workplace requirements for all aspects of applying reinforcement schedule including interpreting work orders and reporting problems
- interpretation of plans, drawings and specifications, including job specifications, format and contents of reinforcement schedules, and format and general content of typical construction schedules
- information in reinforcement schedules, including:
 - grade of steel reinforcing
 - length of material
 - location for material, size and shape of bars

- number of bars in a bundle
- shape of formed bars
- size of mesh
- surface markings
- type of steel bars, cranks and bends
- structural elements, including:
 - beams
 - columns
 - footings
 - slabs
 - walls
- general construction and steel-fixing terminology
- conventional symbols, markings and numbering systems used in reinforcement schedules
- reinforcement material types, appearance, standards, packaging and labelling arrangements
- quality requirements for reinforcement materials
- techniques for communicating detail to others, and to record details of work undertaken and completed.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- work sites and specifications for tasks involving application of reinforcement schedules
- appropriate documents, materials, tools, equipment and PPE currently used in industry
- requirements of appropriate sections of legislation and regulations
- relevant workplace policies and procedures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3001 Design and lay out digital signs for production

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI2002A Lay out and design signage and CPCCSI3016A Produce digital signage using advanced software applications.

Application

This unit of competency specifies the outcomes required to design and lay out signs using industry-recognised design software and to prepare files to be print ready.

The unit supports sign manufacturers who design and modify signs according to client requirements and prepare artwork for a range of diverse outputs, which can include vehicles, posters, billboards and panels.

Sign designs can be simple or complex in nature according to the range of software functionality used and the nature and volume of elements used to design the sign.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- | | | | |
|---|-------------------------|-----|---|
| 1 | Plan production job. | 1.1 | <i>Client requirements</i> and <i>visual design elements</i> are discussed, confirmed with client, and applied to planning. |
| | | 1.2 | Use of existing client artwork is identified, and scope and limitations of potential <i>file formats</i> are discussed. |
| | | 1.3 | Style parameters to be applied to sign are discussed and confirmed with client. |
| | | 1.4 | Design timeframe requirements are established, confirmed with client, and applied to planning. |
| 2 | Prepare to design sign. | 2.1 | Industry-recognised software appropriate to sign design is selected and set up according to job requirements. |
| | | 2.2 | New file is created and <i>document parameters</i> are set up appropriate to final sign specifications. |
| | | 2.3 | Existing digital artwork is imported where required, checked for compatibility with software and output devices, and prepared as appropriate to the task. |
| | | 2.4 | Image databases are researched and images that meet design brief and stock images are selected and imported in appropriate file formats. |
| | | 2.5 | Design templates are selected and imported in appropriate file formats. |
| 3 | Design sign. | 3.1 | Digital elements of the sign are created according to client requirements. |
| | | 3.2 | Elements are arranged in layers to allow for effective selection and re-arrangement. |
| | | 3.3 | Text blocks are created as required, and text is entered, |

- formatted and flowed into document using software functionality and in line with client requirements.
- 3.4 Graphic elements of sign are selected, positioned and edited using relevant software functionality in line with client requirements.
- 4 Produce vector objects and shapes.
- 4.1 Vector objects and shapes are produced with required attributes using relevant software functionality, and manipulated until graphic framework is finalised.
- 4.2 Lines and curves are adjusted and edited to fit design specifications.
- 4.3 Objects are painted and transposed and strokes and effects are scaled according to the design brief.
- 4.4 Colour and appearance attributes are selected and copied according to client brief.
- 4.5 Gradients, fills and patterns are used to paint and blend according to client requirements.
- 5 Edit raster images.
- 5.1 Images are retouched and colour and tone corrections are adjusted to meet client requirements.
- 5.2 **Contouring technique** is applied to produce the best result, depending on the image.
- 5.3 Edited image is saved in appropriate format to allow for importing into other applications and to conform to job specifications.
- 6 Obtain client approval for design.
- 6.1 Draft sign layout is produced and working file saved in appropriate file format.
- 6.2 Compressed file is sent to client in appropriate file format for approval.
- 6.3 Client feedback is obtained for sign design and sign is reviewed and modified where required according to client feedback.
- 6.4 Client sign-off is obtained on final version sign design

and sign.

- | | | | |
|---|----------------------------------|-----|---|
| 7 | Finalise sign design and layout. | 7.1 | Approved design layout is produced in appropriate file format and checked to be free of errors. |
| | | 7.2 | File resolution is adjusted to suit relevant print outputs. |
| | | 7.3 | Print ready design layout is produced, saved in appropriate file formats, and stored according to workplace procedures and client requirements. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • independently search databases and internet to source images appropriate to sign designs • develop and trial own approaches to designing signs when templates are not available.
Numeracy skills to:	<ul style="list-style-type: none"> • use and apply software tools to set sign dimensions to the layout of designs.
Oral communication skills to:	<ul style="list-style-type: none"> • check and confirm requirements with client and other relevant personnel.
Reading skills to:	<ul style="list-style-type: none"> • interpret written client feedback on draft designs • use a range of strategies to proof text in signs.
Writing skills to:	<ul style="list-style-type: none"> • liaise with client, seeking feedback on design layout.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Client requirements must include:

- dimensions of sign
- intended site for sign installation
- purpose of sign
- type of preferred media in which to produce sign.

Visual design elements must include:

- colour
- graphics requirements
- text requirements.

File formats must include:

- drawing exchange format (DXF)
- encapsulated post script (EPS)
- portable document format (PDF)
- tagged image file format (TIFF).

Document parameters must include:

- colour space
- size of sign design and file.

Contouring techniques must include two or more of the following:

- layer masks
- lasso tool
- paths
- quick mask.

Unit Mapping Information

CPCCSI2002A Lay out and design signage

CPCCSI3016A Produce digital signage using advanced software applications

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3001 Design and lay out digital signs for production

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI2002A Lay out and design signage and CPCCSI3016A Produce digital signage using advanced software applications.

Performance Evidence

A person who demonstrates competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must design and lay out three different signs each consisting of letters and graphics and a minimum of three different colours, according to the following specifications:

- one sign must be for a standard vehicle door, and use a logo, at least three lines of text, and a standard font
- one sign must manipulate the logo and lettering designed for the standard vehicle door, and lay out the design for a light box panel in landscape measuring minimum 1200 x 2400 mm
- one sign must be for a minimum 1200 x 2400 mm panel in portrait, and use three text blocks each containing at least three lines of text and at least two different images sourced from an image database.

In doing the above work, the person must:

- apply design theory to each sign, using colour effectively to create signs with visual impact
- apply design and layout principles suited to the specified output giving consideration to how each sign will be displayed and the conditions under which each sign will be viewed
- use industry-recognised software to produce the sign design and lay out a print ready file.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- principles and application of design and layout theory relevant to sign manufacture, including:

- balance
- colour and colour harmony
- contrast
- principles and application of letter legibility relevant to sign manufacture, including:
 - format of text
 - letter spacing
 - letter styles
 - type of font used
- techniques for conveying image concept and meaning of the design through the choice and features of typography
- use of dimensions, symbols, abbreviations and key features of designs for signs
- uses and functionality of industry-recognised software for designing and laying out signs
- types, characteristics, uses and limitations of vector and raster files when designing signs
- Australian and international standards relevant to the design of signs used in public spaces, including:
 - AS 1319 Safety signs for the occupational environment
- terminology used in the design and layout of signs.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - computer with proprietary design software appropriate to the design and layout of signs
- materials:
 - image database containing a range of stock images
- specifications:
 - client brief detailing specifications for sign
 - AS 1319 Safety signs for the occupational environment
- relationship with client:
 - check and confirm job requirements
- relationships with team members:
 - work may be undertaken alone or in a team
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3002 Produce and apply vinyl signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI3001A Produce vinyl signage and CPCCSI3004A Apply advanced vinyl applications.

Application

This unit of competency specifies the outcomes required to produce simple and complex vinyl signs using relevant software, vinyl plotters and weeding tools.

The unit supports sign manufacturers who produce vinyl signs according to client requirements, for attachment to a range of surfaces, including vehicles, metals and glass.

Vinyl signs can be used for advertising, promotional, branding or directional purposes.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- | | | |
|---|---|--|
| 1 | Plan and prepare to produce vinyl sign. | <p>1.1 Job requirements are identified from drawings, specifications and client brief, confirmed, and applied to planning and preparation.</p> <p>1.2 <i>Health and safety requirements</i> are identified and applied to planning.</p> <p>1.3 <i>Tools, equipment and materials</i> are selected and prepared to carry out tasks consistent with job requirements, and faults are identified and reported.</p> <p>1.4 Correct vinyl type is selected according to planned application and durability requirements.</p> <p>1.5 Sign is set out to scale using industry-recognised software and prepared for production using vinyl plotter.</p> |
| 2 | Operate software and vinyl plotter. | <p>2.1 File is checked for correct layout according to job requirements, and modifications are made before sending file to plotter.</p> <p>2.2 Media is accurately loaded on to plotter and tracking is checked for accuracy.</p> <p>2.3 <i>Vinyl</i> plotter cutting pressure and speed settings are adjusted to suit media.</p> <p>2.4 Cut area dimensions are determined and set to suit media.</p> <p>2.5 File is configured and sent to plotter and finished output is carefully removed from plotter.</p> <p>2.6 Vinyl sign elements are carefully removed using weeding tools and sign is checked to be free of defects.</p> <p>2.7 Finished vinyl sign is cut, ensuring minimum waste and no damage to vinyl.</p> |

- | | | | |
|---|------------------------------|-----|---|
| 3 | Apply vinyl sign to surface. | 3.1 | Surface is cleared of previously applied adhesives minimising risk of damage to surface, cleaned and dried ready for vinyl application. |
| | | 3.2 | Application tape is applied to vinyl sign, squeegeed evenly and firmly to sign, and excess tape is trimmed off. |
| | | 3.3 | Required heights and levels are identified from job requirements and applied to surface and vinyl sign using levelling tools. |
| | | 3.4 | Vinyl sign is positioned and applied to prepared surface using tools and techniques and according to job requirements. |
| | | 3.5 | Application tape is removed, sign is checked, and any defects in application are rectified. |
| 4 | Clean up. | 4.1 | Sign and surrounding surface area are cleaned and waste materials removed according to statutory and regulatory authority requirements. |
| | | 4.2 | Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • apply key principles and techniques of sign manufacture when producing and applying vinyl signs.
Numeracy skills to:	<ul style="list-style-type: none"> • calculate material quantities and sign dimensions appropriate to the production and application of vinyl signs.
Oral communication	<ul style="list-style-type: none"> • clarify job requirements and client expectations with client and

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
skills to:	colleagues.
Reading skills to:	<ul style="list-style-type: none"> • identify and interpret manufacturer specifications for tools, equipment and materials used when producing vinyl signs.
Writing skills to:	<ul style="list-style-type: none"> • report faults in tools and equipment to manufacturers and other relevant personnel.
Technology skills to:	<ul style="list-style-type: none"> • set up and manage files and software used to produce vinyl signs.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Health and safety requirements</i> must include:	<ul style="list-style-type: none"> • selection, correct fitting, and use of PPE prescribed under legislation, regulations, and workplace policies and practices • emergency procedures, including: <ul style="list-style-type: none"> • evacuation • first aid • location and use of firefighting equipment • hazard identification and risk control procedures • safe operating procedures, including the conduct of operational risk assessment and treatments associated with: <ul style="list-style-type: none"> • lighting • use of tools and equipment • workplace environmental requirements.
<i>Tools and equipment</i> must include:	<ul style="list-style-type: none"> • levelling tools • metal rules

- scissors
- squeegees
- vinyl plotter
- weeding tools.

Materials must include:

- application fluid
- application tape
- marking pencils
- surface cleaning and preparation chemicals
- vinyl.

Vinyl types must include:

calendered:

- monomeric
- polymeric
- cast
- air egress material for vehicle wraps.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3002 Produce and apply vinyl signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI3001A Produce vinyl signage and CPCCSI3004A Apply advanced vinyl applications.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must produce three vinyl signs using a vinyl plotter according to the following specifications:

- one sign containing only lettering in a single colour
- one sign containing lettering and a simple graphic, consisting of at least three different colours.

Each sign must be applied to a different surface selected from the following:

- glass
- metal
- plastic
- vehicle body.

In producing each sign, the person must ensure no damage to the vinyl during the weeding or cutting processes. In the event of damage caused, the person must demonstrate correct procedures to rectify or reproduce the vinyl sign.

In applying the sign to each surface, the person must:

- correctly use materials to prepare the surface
- apply the signs at the specified heights and levels
- check for damage to the vinyl or surface that could have occurred during the application process and rectify damage.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- attributes, characteristics and composition of different vinyl types used to produce signs
- functionality and operation of vinyl plotters used to produce vinyl signs, including:
 - blade offset setting
 - blade types
 - cleaning and maintenance requirements
 - cutting pressure and speeds appropriate to the task
 - test cut requirements
 - vinyl tracking characteristics
- functions and limitations of relevant graphic design software used in producing vinyl signs
- impact of different temperatures on vinyl application
- legislation, codes and standards relevant to the specific production work in performance evidence
- principles of vinyl cutting
- terminology used in signs.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - computer with proprietary software appropriate to producing vinyl signs
 - selection, correct fitting, and use of personal protective equipment (PPE) relevant to preparing surface
 - tools and equipment as listed in the range of conditions
- materials:
 - as listed in the range of conditions
- specifications:
 - client briefs, drawings and instructions
- relationship with client:
 - check and confirm requirements
- relationships with team members:
 - work may be conducted alone or with others
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3003 Colour manage signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI2001A Use colour for signage.

Application

This unit of competency specifies the outcomes required to assess and apply colour consistently across a range of visual media used to produce signs. It requires the application of colour theory and an ability to use industry-recognised software, hardware and colour matching systems for a range of output devices.

The unit supports sign manufacturers working with different media where the accuracy and consistency of colour are critical to the quality of the final product.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe the performance needed to

- essential outcomes. demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.
- 1 Plan and prepare to manage colour.
 - 1.1 **Job requirements** are identified from drawings, specifications, instructions and client briefs, confirmed, and applied to planning and preparation.
 - 1.2 Colour matching system appropriate to the task is selected.
 - 1.3 **Digital devices** used in production of signs are identified and calibrated for colour accuracy and consistency using industry-recognised calibration software and techniques, and faults are identified and rectified or reported to relevant personnel before starting work.
 - 1.4 Colour profile appropriate to the task is identified and set up in industry-recognised software.
 - 1.5 Digital image is imported into software and converted to correct colour profile as necessary.
 - 2 Apply and modify colour.
 - 2.1 Colour legibility is assessed against job requirements, and levels of contrast are adjusted and applied to sign design.
 - 2.2 Colour scheme is determined and principles of colour harmony are applied to sign according to client requirements.
 - 2.3 Test prints are produced and checked against job requirements.
 - 2.4 Sign is colour corrected as required using software tools to ensure consistent application of colour.
 - 3 Maintain colour management systems.
 - 3.1 Colour management systems are routinely checked for accuracy and updated when necessary.
 - 3.2 Digital devices used in sign production are routinely checked and recalibrated when necessary.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none">consider and respond to feedback relating to achievement of client requirements and colour consistency in signs.
Numeracy skills to:	<ul style="list-style-type: none">recognise differences in and apply numerical values of colour to digital images.
Oral communication skills to:	<ul style="list-style-type: none">confirm job requirements and liaise with others on colour matching processes and results.
Writing skills to:	<ul style="list-style-type: none">report faults in software or output devices to relevant personnel using appropriate documentation and industry-recognised terminology.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Job requirements</i> must include:	<ul style="list-style-type: none">colour requirementsdimensions of signrequired materialstype of sign.
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<i>Digital devices</i> must include:	<ul style="list-style-type: none">computer monitorprinterscanner.
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Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3003 Colour manage signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI2001A Use colour for signage.

Performance Evidence

A person who demonstrates competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must accurately colour match three different digital signs using each of the following devices in the process:

- computer monitor
- digital press
- printer
- proofer
- scanner.

A different colour matching system should be used on each of the three signs, selected from:

- cyan, magenta, yellow and black (CMYK)
- pantone matching system (PMS)
- red, green and blue (RGB).

In doing the above work, the person must:

- accurately calibrate devices to be used in sign production workflow
- apply a colour matching system according to job requirements
- adjust colour and contrast to ensure legibility as appropriate to the task
- check and confirm colour consistency is achieved across each output device and rectify any fault in colour matching.

The person must then select three different colours from one of the digital signs and produce a colour match in paint for each colour.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- uses, applications and limitations of a range of colour matching systems used in the manufacture of signs, including:
 - black and white
 - CMYK
 - grey scale
 - PMS
 - RGB
- functionality and limitations of software used to apply and manage colour in the manufacture of signs
- principles of colour legibility and the use of contrast
- principles and application of colour harmony, including:
 - analogous
 - complementary
 - monochromatic
 - split complementary
- uses, principles and applications of colour theory in sign manufacture.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - computer with industry-recognised proprietary software appropriate to sign design, including calibration software
- materials:
 - appropriate to the digital output
- contingencies:
 - inconsistent colour reproduction across different output devices
 - recalibration of digital devices
- specifications:
 - client brief detailing job specifications
- relationship with client:
 - contact sufficient to confirm or clarify job requirements
- relationships with team members:
 - work may be undertaken with others
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3004 Print digital signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI2004A Produce digital signage and CPCCSI3016A Produce digital signage using advanced software applications.

Application

This unit of competency specifies the outcomes required to produce finished signs from print ready digital files, using printers and their associated software. Signs can be printed on to a range of substrates, including paper, vinyl, glass, fabric and aluminium composite, using a range of printing technology and equipment. They may also be laminated for protection.

The unit supports sign manufacturers using industry-recognised software and printing equipment to produce signs that are displayed for commercial, advertising, informative and promotional purposes.

Digitally printed signs can be used to produce banners, illuminated signs, billboards, panels and vehicle graphics.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1	Plan and prepare work.	1.1	Job requirements are identified from client briefs, existing file specifications and workplace instructions, confirmed, and applied to planning and preparation.
		1.2	Output devices suited to the task are identified and printing format is selected and confirmed with client.
		1.3	Workflow roles and responsibilities, sequence of tasks and time requirements are confirmed and applied to planning.
		1.4	Printing software appropriate to the task is selected and set up according to job requirements.
		1.5	<i>Health and safety requirements</i> are identified and applied to planning.
2	Set up printer.	2.1	Print heads are checked for serviceability, monitored, and adjusted or serviced when required.
		2.2	Print media is selected appropriate to type of digital printing required and loaded into printer according to manufacturer specifications.
		2.3	Correct profile for the media is selected to meet job requirements.
		2.4	Feed and bi-directional calibration are adjusted to suit given media.
3	Produce printed	3.1	Print ready digital file is checked for correct output profiles and adjustments are made as required to suit

- sign. output device and media.
- 3.2 Correct colour profiles are applied to file to accurately reproduce colours.
 - 3.3 Image resolution is checked and confirmed as appropriate to output specifications.
 - 3.4 Bleeds, printer marks and contour cuts are applied.
 - 3.5 Digital file is sent to be ripped as required.
 - 3.6 Test prints are printed, quality checked against job requirements, and modifications are made to files and output devices as required to improve print quality.
 - 3.7 Printed sign is checked for quality and client requirements and printed in quantities and according to specifications.
- 4 Laminate printed sign.
- 4.1 Laminator and laminate are selected according to type of printed media and job requirements and are prepared for use.
 - 4.2 Laminate is loaded into laminator, machine controls are adjusted, and laminate is applied to printed media to manufacturer specifications.
 - 4.3 Laminated sign is checked for quality and client requirements, defects are identified and rectified or sign is reprinted and laminated until client requirements are met.
 - 4.4 Laminated sign is stored safely.
- 5 Clean up.
- 5.1 Work area is cleaned and waste materials sorted and removed according to regulatory authority requirements.
 - 5.2 Equipment and printer components are checked and routine maintenance is undertaken, or arranged with external provider as required.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Numeracy skills to:	<ul style="list-style-type: none">• set specifications to printing profiles and settings.
Oral communication skills to:	<ul style="list-style-type: none">• confirm job requirements with clients and other relevant personnel.
Reading skills to:	<ul style="list-style-type: none">• interpret a range of manufacturer specifications when working with printers and printing media.
Writing skills to:	<ul style="list-style-type: none">• report faults in printing equipment to manufacturers and other relevant personnel using industry terminology.
Problem-solving skills to:	<ul style="list-style-type: none">• assess the nature and scope of printing requirements for new and challenging printing tasks.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Health and safety requirements</i> must include:	<ul style="list-style-type: none">• selection, correct fitting, and use of personal protective equipment (PPE) prescribed under legislation, regulations and workplace policies and practices• emergency procedures, including:<ul style="list-style-type: none">• evacuation• first aid• location and use of firefighting equipment• hazard identification and risk control procedures• safe operating procedures, including the conduct of operational risk assessment and treatments associated with:<ul style="list-style-type: none">• use of machines
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- use of tools and equipment
- workplace environmental requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3004 Print digital signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI2004A Produce digital signage and CPCCSI3016A Produce digital signage using advanced software applications.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must print three different signs from digital files on each of the following media:

- aluminium composite
- paper
- vinyl.

At least one sign must be produced using a flatbed printer and one sign using a roll to roll digital printer.

Laminate one of the finished signs, selecting laminate for the printed substrate according to type of printed media and job requirements and safely and effectively undertaking laminating processes.

In doing the above work, the person must:

- handle and use uncompressed file formats correctly in the digital printing process
- apply digital colour management principles when using software and output media
- correctly handle media used in the digital printing process
- select and set up appropriate printers for the task and conduct routine maintenance appropriate to the printer
- identify printing and laminating defects and rectify faults to ensure job requirements are met
- operate raster image processor (RIP) software in the printing process.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- characteristics of different types of digital printing output devices, including:
 - flatbed printers
 - roll to roll printers
 - ultraviolet (UV) printers
- types and characteristics of various digital printing products
- principles of colour theory and their application in printing digital signs
- range and application of different laminates
- techniques and process for laminating signs
- safety data sheets (SDS) relevant to the use of printing tools and equipment
- procedures for routine maintenance and cleaning of printers
- statutory and regulatory authority requirements, particularly those relating to:
 - removal of waste products
 - storage of chemicals
- terminology and use of abbreviations in the signs and graphics industry
- use and application of uncompressed file formats, including:
 - encapsulated post script (EPS)
 - portable document format (PDF)
 - RAW file
 - tagged image file format (TIFF).

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - laminating equipment appropriate to the task
 - printing equipment appropriate to the task
- materials:
 - electronic files prepared for printing
 - laminating film
 - printing media specified in performance evidence
- specifications:
 - job requirements
 - manufacturer specifications
- relationships with team members:
 - work may be conducted alone and in teams
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3005 Engrave signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI3005A Use engraving systems.

Application

This unit of competency specifies the outcomes required to engrave signs using specialist rotary engravers. It covers setting up and initialising computer software to interact with the engraving system, preparing tools and materials for engraving, and operating high speed equipment to produce detailed sign artwork that meets client requirements.

The unit supports sign manufacturers who produce fine, detailed markings on various materials, including metal and non-metal.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe the performance needed to

- essential outcomes. demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.
- 1 Plan and prepare work.
 - 1.1 **Job requirements** are identified, confirmed with client, and applied to planning and preparation.
 - 1.2 **Health and safety requirements** are identified according to specified tasks and workplace operations, and applied to planning.
 - 1.3 Tools and equipment suited to the task are selected, checked for serviceability, and faults are rectified or reported before starting work.
 - 1.4 Materials are selected, checked for quality, and faults are remedied or reported before starting work.
 - 1.5 Client artwork is checked for compatibility with existing software and used to produce working file.
 - 2 Set up engraving hardware and software.
 - 2.1 Connections between engraving software and hardware are established, tested for operational functionality, and faults are identified and rectified or referred to relevant personnel.
 - 2.2 **Specifications** are entered into engraving software.
 - 2.3 Cutter starting position is identified and set up in engraving software.
 - 2.4 Home position is located in engraving system and set up according to the task.
 - 3 Use engraving materials and systems.
 - 3.1 Material is set out and fixed into starting position to correct cut depth, ready for engraving.
 - 3.2 Cutter tools are positioned over materials and engraving system is operated according to manufacturer specifications.
 - 3.3 Operation of cutter tools is routinely checked for performance and, when necessary, tools are safely removed for sharpening or replacement.

- | | | | |
|---|-----------------------|-----|--|
| | | 3.4 | Quality of engraving is checked against client requirements and faults are identified and rectified as required. |
| 4 | Finish engraved sign. | 4.1 | Engraved sign is cleaned of any loose surface materials. |
| | | 4.2 | Engraved sign is paint filled according to client requirements. |
| | | 4.3 | Engraved sign is polished and buffed and sign edges smoothed according to job requirements. |
| | | 4.4 | Engraved sign is checked to be clean and blemish free and carefully stored to prevent surface damage. |
| 5 | Clean up. | 5.1 | Work area is cleaned and waste materials removed according to statutory and regulatory authority requirements. |
| | | 5.2 | Tools and equipment, including personal protective equipment (PPE), are safely cleaned, maintained and stored according to workplace requirements. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • engrave a sign that contains complex lettering and graphics requiring new techniques.
Numeracy skills to:	<ul style="list-style-type: none"> • calculate and measure required distances between sign elements.
Oral communication skills to:	<ul style="list-style-type: none"> • confirm sign job requirements with client and colleagues.
Reading skills to:	<ul style="list-style-type: none"> • read and interpret a range of source documents, including client briefs, manufacturer specifications, safety data sheets, and

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill**Performance feature**

software prompts and instructions.

Writing skills to:

- report faults in engraving systems to manufacturers and colleagues.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Job requirements must include:

- purpose of sign
- quality requirements
- size and style of sign.

Health and safety requirements must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
 - evacuation
 - first aid
 - location and use of firefighting equipment
- sufficient lighting to perform detailed engraving work
- processes for the safe:
 - set-up and operation of cutting tools and equipment
 - handling and storage of materials
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - exposure to dust
 - working in proximity to others
 - working with high speed cutting equipment.

Specifications must

- cut depth
- material type and thickness.

include:

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3005 Engrave signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI3005A Use engraving systems.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must engrave three signs each containing four lines of text, with a border and a centred graphic or logo as follows.

- at least one sign must be engraved on one of the following metal surfaces:
 - aluminium
 - brass
 - stainless steel
- at least one sign must be engraved on one of the following non-metal surfaces:
 - acrylic
 - engraving laminate.

In doing the above work, the person must:

- select and prepare cutter tools and equipment for the task
- set up engraving software with accurate parameters for the task, including speed, depth and number of passes appropriate to the task
- engrave and finish the sign to client requirements using cleaning and polishing materials.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- application of the following typography elements in sign-writing and engraving, including:
 - font types
 - principles of layout
 - size and spacing
- engraving processes and their use of:

- cutter types
- engraving depths
- engraving materials and their uses
- engraving software
- guillotine systems
- types, uses and limitations of engraving systems
- manufacturer specifications for the safe use and maintenance of engravers and cutters
- processes to check and ensure correct grammar, spelling and punctuation and their application in engraving signs
- safe operating procedures for the use of high speed cutting tools and equipment used in engraving
- safety data sheets (SDS) relevant to the use of engraving tools.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - cutting tools
 - engraving system
 - industry-recognised engraving software
 - laser engravers
 - personal protective equipment, including:
 - chemical proof gloves
 - dustcoats
 - glasses
 - hearing protection
 - rotary engravers
- materials:
 - acrylic
 - aluminium
 - brass
 - cleaning chemicals, including thinners and methylated spirits
 - cutting lubricants
 - engraving laminate
 - glass
 - paints to fill engraved letters or graphics
 - stainless steel
- contingencies:
 - faults in hardware and software
 - need to change cutter tools to rectify faults or resharpen

- specifications:
 - client requirements
 - SDS
- physical conditions:
 - workshop with workspace and lighting suitable for using engraving systems and producing engraved signs
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3006 Apply gilding to signs

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Elements and Performance Criteria '3.2 Adhesive is mixed with colour according to job requirements and applied to prepared surface.' moved to 4.1 as an additional subpoint.

Element and Performance Criteria 4.2 corrected to read 'Size is applied carefully to surface and gilding size is checked to be within design.'

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 2.0.

Revised unit of competency. Replaces superseded equivalent CPCCSI3006A Apply gilding to signage.

Application

This unit of competency specifies the outcomes required to prepare background surfaces, and mask, draft and apply gilding to lettering, shapes, heraldic and other decorative forms of signs.

The unit supports sign manufacturers who apply traditional sign-writing techniques and materials to apply gilding to signs.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

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|---|----------------------------------|-----|---|
| 1 | Plan and prepare work. | 1.1 | Job requirements and timeframes are identified from work instructions and client briefs, confirmed, and applied to planning and preparation. |
| | | 1.2 | Health and safety requirements are identified and applied to planning. |
| | | 1.3 | Tools, equipment and materials are selected to carry out tasks consistent with job requirements. |
| | | 1.4 | Sign surface is prepared to receive gilding. |
| 2 | Transfer sign design to surface. | 2.1 | Draft design is set out to scale using setting out techniques applicable to sign design. |
| | | 2.2 | Draft design is drawn to scale and transferred to prepared surface using direct and indirect layout methods. |
| | | 2.3 | Decorative process is applied and defects in application are identified and rectified in line with job requirements. |
| 3 | Apply water gilding to sign. | 3.1 | Gilding material is cut to required size and shape as specified. |
| | | 3.2 | Gilding material is applied to surface, faults in application are identified and rectified, and excess gilding material is trimmed and removed. |
| | | 3.3 | Surface area and sign are cleaned according to job requirements. |
| 4 | Apply surface gilding to sign. | 4.1 | Adhesive is mixed with colour according to job requirements and applied to prepared surface |

- | | | |
|---|-----------|--|
| | 4.2 | Size is applied carefully to surface and gilding size is checked to be within design. |
| | 4.3 | Gilding material is applied to size using rubbing techniques, ensuring no gaps and that design shape is fully covered. |
| | 4.4 | Applied gilding leaf is burnished to ensure loose particles are removed. |
| | 4.5 | Design shape is trimmed carefully where applicable, and cleaning procedure and materials are applied to clean the gilded and surrounding surface. |
| 5 | Clean up. | |
| | 5.1 | Finished gilded sign and surrounding surface area are cleaned and waste materials removed according to workplace, statutory and regulatory authority requirements. |
| | 5.2 | Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • transfer key principles and techniques of letter spacing and writing to new gilded sign designs.
Numeracy skills to:	<ul style="list-style-type: none"> • perform measurements and calculations in the process of setting out to scale and transferring design to required location.
Oral communication skills to:	<ul style="list-style-type: none"> • use questioning to identify and confirm requirements, share information, listen and understand.
Reading skills to:	<ul style="list-style-type: none"> • interpret a range of familiar workplace documentation received in the course of applying gilding to signs, including design

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
	specifications, hand drawings, manufacturer specifications and work instructions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

- Health and safety requirements*** must include:
- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
 - emergency procedures, including:
 - evacuation
 - first aid
 - location and use of firefighting equipment
 - hazard identification and risk control procedures
 - safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - lighting
 - use of machines
 - use of tools and equipment
 - workplace environmental requirements.

- Tools and equipment*** must include at least two of the following:
- cotton wool or velvet
 - gelatine
 - gilder's pad
 - gilding knife
 - gilding mop
 - gilding mug
 - gilding tip
 - heating pots
 - stove.

Unit Mapping Information

CPCCSI3006A Apply gilding to signage

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3006 Apply gilding to signs

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Elements and Performance Criteria '3.2 Adhesive is mixed with colour according to job requirements and applied to prepared surface.' moved to 4.1 as an additional subpoint.

Element and Performance Criteria 4.2 corrected to read 'Size is applied carefully to surface and gilding size is checked to be within design.'

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 2.0.

Revised unit of competency. Replaces superseded equivalent CPCCSI3006A Apply gilding to signage.

Performance Evidence

A person who demonstrates competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must produce one word of gilded lettering on two different sign surfaces selected from the following:

- glass
- metal
- stained timber.

In doing the above work, the person must:

- prepare the sign surface using selected materials and processes
- lay out sign design accurately to scale on sign surface and apply a decorative technique to the lettering
- clean finished sign and surface area.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- theory of letter spacing when laying out signs
- methods and application of design transfer
- range and use of gilding materials and their characteristics, including:

- enamel paints or suitable paints for glass
- loose leaf metals, such as:
 - gold
 - silver
 - aluminium
 - Dutch metal
 - copper
 - variegated leaf
 - water-based size
- techniques for gilding and producing gilded surfaces, including:
 - finishing techniques
 - handling materials relevant to gilding operations
- methods for identifying dimensions, symbols, abbreviations and key features of signs from sign designs and drawings
- purpose and application of the following when applying gilding to signs:
 - safety data sheets (SDS)
 - safe work method statements (SWMS)
- techniques for measuring and setting out layout of signs to be gilded
- preparation techniques for surfaces used in gilding signs, including:
 - glass
 - metal
 - stained timber
- workplace, statutory and regulatory authority requirements relevant to handling materials used in gilding signs, including:
 - removal of waste products
 - storage of chemicals and materials
- terminology and use of abbreviations in the signs and graphics industry
- traditional and contemporary font styles
- types and characteristics of tools and equipment used to apply water gilding.

Assessment Conditions

Suitable assessment of performance requires:

- equipment and tools:
 - as listed in the range of conditions
- materials:
 - gilding materials
 - sign surface specified in performance evidence
 - paints suitable for gilding signs
- specifications:
 - work instructions

- SDS
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3007 Paint lines and scrolls

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3007A Apply lines and scrolls.

Application

This unit of competency specifies the outcomes required to paint various forms of line and scroll work on specified and prepared surfaces.

Painted line and scroll work is a decorative art form applied to a variety of surfaces, including vehicle bodies, horse-drawn coaches, boats and glass gilding. Lines are painted to provide borders and to frame the sign. Application methods can include the use of freehand brushwork or rollers and spray techniques using masks and template guides.

The unit supports sign manufacturers using traditional paint and brush techniques.

No licensing, legislative, regulatory, or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1	Plan and prepare work.	1.1	Job requirements are identified from drawings, specifications, and client or workplace instructions, confirmed, and applied to planning and preparation.
		1.2	<i>Health and safety requirements</i> are identified and applied to planning.
		1.3	Colour selection is determined consistent with job requirements and recorded for future reference.
		1.4	<i>Tools, equipment</i> and materials are selected to carry out tasks consistent with job requirements.
		1.5	Surfaces are identified and prepared according to planned material application and line work or scroll work application.
2	Set out design layout.	2.1	Shape and form of lines and scrolls are determined from copy.
		2.2	Line and scroll layout is set out using template guide where required.
		2.3	Errors in set out are identified and rectified before applying paint.
3	Apply painted lines and scrolls.	3.1	<i>Paint</i> appropriate to the surface is applied using relevant technique according to layout and job requirements.
		3.2	Line work and scroll work are painted accurately to setout and specified colours, and defects in application or technique are identified and rectified according to job requirements.
4	Clean up.	4.1	Worked surface and surrounding surface area are cleaned

and waste materials removed according to workplace, statutory and regulatory authority requirements.

- 4.2 Tools and equipment, including personal protective equipment, are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • transfer key principles and techniques of painting lines and scrolls on different surfaces.
Numeracy skills to:	<ul style="list-style-type: none"> • transfer measurements from drawings to paint lines or scroll work.
Oral communication skills to:	<ul style="list-style-type: none"> • check and confirm requirements with clients and other relevant personnel.
Reading skills to:	<ul style="list-style-type: none"> • read and interpret a range of workplace documentation, including drawings and specifications.
Writing skills to:	<ul style="list-style-type: none"> • record colours used in painting lines and scrolls on prepared surfaces.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

- Health and safety requirements*** must
- selection, correct fitting, and use of personal protective equipment (PPE) prescribed under legislation, regulations and

- include:
- workplace policies and practices
 - emergency procedures, including:
 - evacuation
 - first aid
 - location and use of firefighting equipment
 - hazard identification and risk control procedures
 - safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - traffic control
 - work site visitors and the public
 - working at heights
 - working in proximity to others
 - use of tools and equipment
 - workplace environmental requirements.

- Tools and equipment*** must include artist brushes and at least three of the following:
- dagger liners
 - drafting equipment
 - guides
 - ladders
 - lining fitches
 - mahl sticks
 - measuring tapes and rules
 - planks
 - pots
 - quill liners
 - scaffolding
 - sign cutters
 - stirrers
 - straight edges
 - templates.

- Paint*** type must include one or more of the following:
- acrylic
 - enamel
 - water-based.

Unit Mapping Information

CPCCSI3007A Apply lines and scrolls

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3007 Paint lines and scrolls

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3007A Apply lines and scrolls.

Performance Evidence

A person who demonstrates competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must paint three lines on a rendered brick wall, each line at least 1.5 metres in length and of the following thicknesses:

- 12 mm
- 25 mm
- 50 mm.

The person must also paint three different scrolls, each measuring at least 300 x 400 mm using three different colours. Each scroll must be painted onto a different surface selected from the following:

- fibreglass
- glass
- metal
- timber.

At least one scroll must involve the use of a template guide.

In producing the above work, the person must demonstrate each of the following line and scroll techniques:

- arrowed
- bull nosed
- curled
- square end
- tapered.

-

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- Australian standards relevant to painting lines and scrolls:
 - AS 1319 Safety signs for the occupational environment
 - AS 2311 General workmanship – painting
 - AS 2700 Colour standards for general purposes
- types, uses and maintenance requirements for brushes used in line and scroll work
- principles and techniques of colour selection in the design of line and scroll work
- purpose and application of the following when painting lines and scrolls:
 - paint, tools and equipment used when creating line and scroll work specified by client
 - safety data sheets (SDS)
 - safe work method statements (SWMS)
- statutory and regulatory authority requirements, particularly those relating to:
 - removal of waste products
 - storage of chemicals and materials
- techniques and methods for:
 - measuring and calculating material quantities required for painting lines and scrolls on prepared surfaces
 - setting out line and scroll work
- use of symbols, dimensions and terminology relating to line and scroll work
- terminology and use of abbreviations in the signs and graphics industry
- types and uses of drawings and layouts used for line and scroll work on surfaces.

Assessment Conditions

Suitable assessment of performance requires:

- equipment and tools:
 - as listed in the range of conditions
- materials:
 - paint
 - surfaces:
 - fibreglass
 - glass
 - metal
 - timber
- relationship with client:
 - sufficient to check and confirm job requirements
- specifications:

- Australian standards specified in knowledge evidence
- drawings
- job specifications
- SDS
- SWMS
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3008 Hand draw chalkboards and showcards

Modification History

Release 1.

This version first released with CPC Construction and Property Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3008A Write showcards and chalkboards.

Application

This unit of competency specifies the outcomes required to lay out and manually draw chalkboards and showcards for commercial signs.

The unit supports sign manufacturers who produce customised products for clients using traditional sign-writing techniques, materials and methods. Work is performed using a range of brushes, paints and chalk to produce hand drawn lettering and graphics.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised

text is used, further information is detailed in the range of conditions.

- | | | |
|---|---|---|
| 1 | Plan and prepare work. | 1.1 Job requirements are identified from drawings, specifications, and client or workplace instructions, confirmed, and applied to planning and preparation. |
| | | 1.2 Health and safety requirements are identified, confirmed, and applied to planning. |
| | | 1.3 Spelling of client-supplied content is checked from copy and confirmed as correct. |
| | | 1.4 Tools and equipment are selected to carry out tasks according to job requirements, checked for serviceability, and faults are rectified or reported before starting work. |
| | | 1.5 Adhesives and fixatives are selected to carry out tasks according to job requirements. |
| | | 1.6 Chalkboard or showcard is prepared according to planned material application. |
| | | 1.7 Colour selection is determined, consistent with job requirements. |
| 2 | Lay out and produce lettering and graphics on chalkboard or showcard. | 2.1 Draft sketches of design are produced on prepared chalkboard or showcard according to job requirements. |
| | | 2.2 Detailed layout of design is set out to scale according to specifications, drawings and sketches. |
| | | 2.3 Lettering and graphic elements of sign are drawn according to design specifications using selected materials, colours and application techniques, and selected colours are recorded for future reference. |
| | | 2.4 Accurate proportion and perspective are applied to the illustration using light and shade effects. |
| 3 | Finalise work. | 3.1 Completed work is checked for accuracy according to job requirements, defects are identified and rectified, and finished sign is cleaned and presented to client. |

- 3.2 Work area is cleaned and waste materials removed according to statutory and regulatory authority requirements.
- 3.3 Tools and equipment, including personal protective equipment, are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • transfer key principles and techniques of sign-writing to the production of hand drawn chalkboards or showcards.
Numeracy skills to:	<ul style="list-style-type: none"> • measure accurately and calculate material quantities required to hand draw chalkboards or showcards.
Oral communication skills to:	<ul style="list-style-type: none"> • use questioning to identify and confirm requirements, share information, listen and understand.
Reading skills to:	<ul style="list-style-type: none"> • interpret a range of familiar information, including drawings, charts and documentation, manufacturer specifications, and job instructions.
Writing skills to:	<ul style="list-style-type: none"> • record the use of colours applied when writing chalkboards.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Health and safety</i>	<ul style="list-style-type: none"> • selection, correct fitting, and use of personal protective
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<p>requirements must include:</p>	<p>equipment (PPE) prescribed under legislation, regulations and workplace policies and practices</p> <ul style="list-style-type: none"> • emergency procedures, including: <ul style="list-style-type: none"> • evacuation • first aid • location and use of firefighting equipment • hazard identification and risk control procedures • safe operating procedures, including the conduct of operational risk assessment: <ul style="list-style-type: none"> • lighting • use of tools and equipment • workplace environmental requirements.
<p>Tools and equipment must include at least three of the following:</p>	<ul style="list-style-type: none"> • blackboard paint • brushes • chalk • chalkboards • crayons • felt tip pens • measuring equipment • omnichrome pencils • pastels • polyvinyl acetate (PVA) paints • rollers and trays • transfer paper.

Unit Mapping Information

CPCCSI3008A Write showcards and chalkboards

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3008 Hand draw chalkboards and showcards

Modification History

Release 1.

This version first released with CPC Construction and Property Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3008A Write showcards and chalkboards.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must produce:

- one menu consisting of lettering and graphics on chalkboard
- one showcard using paints and brushes, drawn on cardboard.

In doing the above work, the person must:

- prepare each surface
- apply the principles and theory of laying out signs to ensure their legibility and visual impact
- select and use tools and materials to safely and efficiently meet the job requirements.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- surface compatibility with different paints and mediums and various methods for their application
- design principles and their application in hand drawing chalkboards and showcards, including:
 - construction of alphabets and choice of fonts
 - theory of letter spacing
 - principles and application of theories of laying out signs, including:
 - balance
 - colour
 - contrast
 - harmony

- letter styles
- space
- relevant Australian standards applicable to hand drawn signs, including:
 - AS 1319 Safety signs for the occupational environment
 - AS 2311 General workmanship – painting
 - AS 2700 Colour standards for general purposes
- colour selection techniques and principles relating to hand drawing chalkboards and showcards
- commonly used drawings and layouts for chalkboards and showcards
- purpose and application of the following when working with materials required to produce hand drawn chalkboards:
 - safety data sheets (SDS)
 - safe work method statements (SWMS)
- processes and techniques to measure and calculate material quantities required when hand drawing chalkboards and showcards
- measuring and setting out methods relevant to layout of hand drawn chalkboards and showcards
- statutory and regulatory authority requirements relating to the use and handling of materials used in drawing chalkboards and showcards, including:
 - removal of waste products
 - storage of chemicals and materials
- symbols, dimensions and terminology relating to chalkboards and showcards
- techniques for writing chalkboards and showcards
- types and characteristics of brushes and applicators used when producing hand drawn chalkboard and showcard signs
- types, use and compatibility of materials applied to chalkboards and showcards.

Assessment Conditions

Suitable assessment of performance requires:

- equipment and tools:
 - as listed in the range of conditions
- specifications:
 - Australian standards specified in knowledge evidence
 - drawings
 - SDS
 - SWMS
 - work instructions
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3009 Screen-print signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3009A Screen-print signage.

Application

This unit of competency specifies the outcomes required to screen-print signs.

The unit supports sign-writers who print directly on to materials, including fabric and paper, using screen-printing tools and techniques.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- 1 Plan and prepare work.
 - 1.1 Job requirements are identified from drawings, workplace instructions and client briefs, confirmed, and applied to planning and preparation.
 - 1.2 Screen-printing *tools and equipment* are selected, checked for serviceability, and faults are rectified or reported before starting work.
 - 1.3 *Health and safety requirements* are identified according to specified tasks and workplace operations and applied to planning.
 - 1.4 Materials to be screen-printed are selected and prepared for printing.
 - 1.5 Number of screens required is calculated and confirmed, and then applied to planning.
 - 1.6 Ink colours are selected, tested to match specification, and prepared for application.

- 2 Produce screen-printed sign.
 - 2.1 Material for screen face is cut accurately to setout shape and design is reproduced to screen face.
 - 2.2 Stencils are prepared according to job requirements.
 - 2.3 Printing process is set up for operation with material and screen aligned to specification.
 - 2.4 Ink is applied and spread across screen, checked for even and consistent application, and reapplied as required.
 - 2.5 Screens are printed on to substrates to achieve accurate registration according to job specification.
 - 2.6 Screen-printed sign is checked for consistency and accuracy according to job requirements and defects are identified and rectified.

- 3 Clean up.
 - 3.1 Finished sign and surrounding surface area are cleaned and waste materials removed according to statutory and regulatory authority requirements.
 - 3.2 Tools and equipment, including personal protective

equipment (PPE), are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none">• transfer key principles and techniques of colour selection when working with different designs to be screen-printed.
Numeracy skills to:	<ul style="list-style-type: none">• calculate and measure quantities of materials required to produce screen-printed signs.
Oral communication skills to:	<ul style="list-style-type: none">• check and confirm job requirements with client and colleagues.
Reading skills to:	<ul style="list-style-type: none">• read and interpret workplace documentation to clarify job requirements, including client brief and workplace instructions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Tools and equipment</i> must include at least five of the following:	<ul style="list-style-type: none">• drying rack• inks• kick leg• paints• palette knife• screen• screening table• squeegee• steel rule• stencil knife.
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Health and safety requirements must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
 - evacuation
 - first aid
 - location and use of firefighting equipment
- hazard identification and risk control procedures
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - lighting
 - use of machines
 - use of tools and equipment
- workplace environmental requirements.

Unit Mapping Information

CPCCSI3009A Screen-print signage

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3009 Screen-print signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3009A Screen-print signage.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must screen-print three signs each consisting of letters and at least one graphic as follows:

- one sign must be screen-printed to one of the following metals:
 - aluminium
 - stainless steel
- one sign must be screen-printed to one of the following fabrics:
 - cotton
 - gauze
 - polyester
 - silk
- one sign must be screen-printed to at least one of the following substrates:
 - glass
 - paper
 - plastic
 - wood.

At least two of the above signs must measure at least 1 square metre.

In doing the above work, the person must:

- reproduce a design and transfer design to material for screen-printing
- cut screen design to shape
- construct screen ready for printing as appropriate to the task.
-

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- colour selection techniques and principles and their application in screen-printed signs
- methods for identifying dimensions, symbols, abbreviations and key features of signs from sign designs and drawings
- purpose and application of the following when screen-printing signs:
 - safety data sheets (SDS)
 - safe work method statements (SWMS)
- principles and techniques for the layout of signs
- relevant Australian standards:
 - AS 1319 Safety signs for the occupational environment
 - AS 2311 General workmanship – painting
 - AS 2700 Colour standards for general purposes
- statutory and regulatory authority requirements relating to the use of materials used in screen-printing signs, including:
 - removal of waste products
 - storage of chemicals and materials
- techniques for cutting designs for screens and screen-printing
- range of traditional and contemporary font styles for use in screen-printing signs
- terminology and use of abbreviations in screen-printing.

Assessment Conditions

Suitable assessment of performance requires:

- equipment and tools:
 - as listed in the range of conditions
- materials:
 - block out
 - cardboard
 - masking tape
 - metal and fabric as specified in the performance evidence
 - screen frames
 - spray adhesive
 - stencil films
 - substrates as specified in the performance evidence
- specifications:
 - AS 1319 Safety signs for the occupational environment
 - AS 2311 General workmanship – painting
 - AS 2700 Colour standards for general purposes
- timeframe:

- according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3010 Hand render pictorials

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3010A Hand render pictorials.

Application

This unit of competency specifies the outcomes required to produce and lay out hand-rendered pictorial images that form signs on a range of surfaces.

The unit supports sign manufacturers who work on site, painting the required sign directly on to a surface, using a range of paints, brushes and application techniques.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of

conditions.

- | | | | |
|---|------------------------|-----|--|
| 1 | Plan and prepare work. | 1.1 | Job requirements are identified from drawings and instructions, confirmed, and applied to planning and preparation. |
| | | 1.2 | Material quantities are estimated according to size of sign and materials to be used. |
| | | 1.3 | Health and safety requirements are identified according to specified tasks and workplace operations, and are applied to planning. |
| | | 1.4 | Substrate is identified and prepared according to planned material application. |
| | | 1.5 | Tools, equipment and materials are selected to carry out tasks according to job requirements and relevant Australian standards. |
| | | 1.6 | Layout is set out to scale. |
| | | 1.7 | Colour selection is determined consistent with job requirements and colours are recorded for future use. |
| 2 | Produce illustration. | 2.1 | Drawing instruments, media and background materials are selected and prepared according to job requirements. |
| | | 2.2 | Illustration is reproduced from design or drawing applying accurate proportion and perspective. |
| | | 2.3 | Light and shade effects are applied to illustration creating visual realism using techniques suitable to the selected medium. |
| 3 | Paint illustration. | 3.1 | Painting techniques are applied to illustration according to job requirements. |
| | | 3.2 | Accurate visual texture, light and shade are applied to the illustration. |
| | | 3.3 | Colours are applied, achieving correct tones and tonal order. |

- 3.4 Lettering and illustration are applied to pictorial sign accurately and cleanly.
- 3.5 Completed illustration is checked for accuracy and completeness and any defects are rectified according to job requirements.
- 4 Clean up and finish sign.
 - 4.1 Sign and surrounding surface environment are cleaned and waste materials removed according to statutory and regulatory authority requirements.
 - 4.2 Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • transfer key principles and techniques of hand rendering pictorials to new sign designs.
Numeracy skills to:	<ul style="list-style-type: none"> • measure and calculate material quantities required to hand render pictorials • calculate and apply scale to enlargements of sign designs.
Oral communication skills to:	<ul style="list-style-type: none"> • communicate clearly with client and others using verbal and non-verbal communication.
Reading skills to:	<ul style="list-style-type: none"> • interpret a range of familiar workplace documentation, including drawings, specifications and written instructions from clients and others.
Writing skills to:	<ul style="list-style-type: none"> • accurately reproduce letters from a design template.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Job requirements must include:

- purpose of sign
- quality requirements
- size and style of sign.

Health and safety requirements must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
 - evacuation
 - first aid
 - location and use of firefighting equipment
- hazard identification and risk control procedures
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - lighting
 - use of machines
 - use of tools and equipment
- workplace environmental requirements.

Tools and equipment must include at least two of the following:

- artist brushes
- easel
- sketch pad.

Unit Mapping Information

CPCCSI3010A Hand render pictorials

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3010 Hand render pictorials

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3010A Hand render pictorials.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must produce two hand-rendered pictorials as follows:

- one must be a portrait of a person, using at least seven different colours, showing facial texture, lines, contouring, light and shade with lettering underneath
- one must be a company logo with lettering, using at least four different colours and showing blended and shaded lettering techniques.

One of the above hand-rendered pictorials must be produced on a masonry wall measuring at least 1.5 square metres.

One of the above hand-rendered pictorials must be produced on one of the following:

- canvas
- glass
- metal
- paper
- timber.

For each hand-rendered pictorial, the person must demonstrate use of at least two different painting techniques selected from:

- posterisation
- scumbling
- stippling
- wet blend.

In doing the above work, the person must:

- interpret design specifications, including dimensions, symbols, abbreviations and key features of signs
- identify and correctly apply designed material to prepared substrate
- identify and record colours used
- apply techniques to produce colour fully to boundary limits
- reproduce pictorial to size requirements
- check the final work for accuracy and completeness, and identify and rectify any defects.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- application of the following typography elements in sign-writing and hand rendering pictorials, including:
 - font types
 - principles of layout
 - size and spacing
- Australian standards relevant to the use of paint:
 - AS 2311 Guide to the painting of buildings
 - AS 2700 Colour standards for general purposes
- paint application techniques relating to hand rendering pictorials
- theory and processes used in colour selection for sign-writing
- methods for identifying dimensions, symbols, abbreviations and key features of signs from pictorial designs and drawings
- compatibility of surfaces with paints, solvents and mediums
- purpose and application of the following when working with paint and other chemicals used to produce hand-rendered pictorials:
 - safety data sheets (SDS)
 - safe work method statements (SWMS)
- processes and techniques to measure and set out relevant to layout of signs
- statutory and regulatory authority requirements, particularly those relating to:
 - removal of waste products
 - storage of chemicals and materials
- terminology and use of abbreviations in the signs and graphics industry.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - artist brushes

- easel
- mediums
- sketch pad
- specifications:
 - AS 2311 Guide to the painting of buildings
 - AS 2700 Colour standards for general purposes
- materials:
 - charcoal
 - oil and acrylic paints
 - pencils
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3011 Install LED technology into signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI3011A Use LED technology for signage, CPCCSI3012A Apply electrical theory for illuminated signage, and CPCCSI3013A Install LED systems.

Application

This unit of competency specifies the outcomes required to select and install light emitting diode (LED) systems into signs. It covers identifying the appropriate LED system to achieve job requirements, laying out and installing the system into position, and connecting and circuit testing the system to ensure consistent distribution of light.

The unit supports sign manufacturers producing illuminated signs. It applies to signs illuminated using LED technology, including light boxes and fabricated letters which, depending on how the modules are positioned inside the letter, will produce either face-illuminated or halo-lit signs.

Where LED lighting is less than 240 volts, no licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement. Should lighting be above 240 volts, relevant state and territory regulatory authorities should be consulted to confirm licensing, legislative, regulatory or certification requirements that apply to this unit of competency.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1	Plan and prepare work.	1.1	<i>Job requirements</i> are identified from specifications and client brief, confirmed, and applied to planning and preparation.
		1.2	Sign installation details are identified and applied to planning.
		1.3	<i>Tools, equipment</i> and <i>materials</i> are selected to carry out tasks consistent with job requirements, and faults are identified and rectified before starting work.
		1.4	<i>Health and safety requirements</i> are identified and applied to planning according to job requirements.
		1.5	Statutory and local authority requirements relating to the display of illuminated sign are identified and applied to planning.
2	Select and prepare LED modules.	2.1	LED system is selected according to job specifications and prepared for use.
		2.2	Quantity of transformers required is calculated according to job specifications, and type of LED system is selected.
3	Fix LED system to sign.	3.1	Sign is checked to be free of damage, and is cleaned and allowed to dry.
		3.2	LED modules are laid out and checked for completeness according to manufacturer recommendations.
		3.3	LED modules are safely fixed to sign according to type of illumination required and manufacturer specifications.

		3.4	Unused wires are safely capped or looped to avoid creating shadows on sign face.
4	Connect and test LED wires	4.1	Module wires are connected to transformers and regulated according to manufacturer specifications.
		4.2	Module wires are tested to be fully functioning and any defects are identified and rectified.
5	Position and check sign.	5.1	Sign is mounted to surface or placed into position according to job requirements.
		5.2	Sign is illuminated and checked for consistent distribution of light according to job requirements.
		5.3	Inadequately lit areas of the sign and possible causes are identified and lighting is rectified according to job requirements.
6	Clean up.	6.1	Finished sign and surrounding surface area are cleaned and waste materials removed according to statutory and regulatory authority requirements.
		6.2	Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill

Performance feature

- Learning skills to:
- access a range of manufacturer support material to identify:
 - changing technology in LED systems
 - required approach to installing LED systems into signs.
- Numeracy skills to:
- calculate:

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
	<ul style="list-style-type: none"> • depth of sign and apply to selection of appropriate LED system • required number of transformers and other elements used when installing LED into signs.
Oral communication skills to:	<ul style="list-style-type: none"> • identify and confirm lighting requirements.
Reading skills to:	<ul style="list-style-type: none"> • interpret manufacturer instructions and recommendations relating to layout and connection of LED systems.
Writing skills to:	<ul style="list-style-type: none"> • report faults in LED systems and components to manufacturers and other relevant personnel using relevant documentation.
Problem-solving skills to:	<ul style="list-style-type: none"> • identify possible causes of faults in signs illuminated with LED technology and trial appropriate solutions.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Job requirements</i> must include:	<ul style="list-style-type: none"> • lighting durability expectations • location of sign • quality of light required: <ul style="list-style-type: none"> • brightness • colour • lighting effect • surface material to which sign is to be fixed • type and dimensions of sign.
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<i>Tools and equipment</i>	<ul style="list-style-type: none"> • caulking gun
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- must include at least three of the following:
- circuit testing equipment
 - electrical connection tools
 - measuring tape
 - PPE suited to working with LED technology
 - soldering tools
 - wire strippers.

Materials must include:

- LED lighting system
- LED modules.
-

Health and safety requirements must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
 - evacuation
 - first aid
 - location and use of firefighting equipment
- contents of and terms used in safe work method statements (SWMS) for the safe use of tools and equipment
- hazard identification and risk control procedures
- safe operating procedures, including operational risk assessment and treatments associated with:
 - soldering
 - working with low voltage electrical wires
 - working with power
- workplace environmental requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3011 Install LED technology into signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI3011A Use LED technology for signage, CPCCSI3012A Apply electrical theory for illuminated signage, and CPCCSI3013A Install LED systems.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must select and install light emitting diode (LED) systems into three signs as follows:

- two fabricated lower case 'b' in Helvetica font, measuring at least 600 mm high x 75 mm wide, and 100 mm deep and mounted to a white surface:
 - one must be face illuminated, with the face of the letter formed of opal acrylic and the back of the letter with a PVC foam backing
 - one must be halo lit, with the sides and face of the letter formed of non-illuminating cast acrylic and the back of the letter formed of clear acrylic
- one freestanding back lit light box measuring up to 1800 mm x 300 mm x 100 mm, with an opal acrylic face.

In doing the above work, the person must:

- identify and confirm client requirements for the finished job, including:
 - colour and brightness requirements
 - location for finished sign
 - quality and performance requirements of finished sign
- lay out, install and secure the LED modules to each sign to ensure even and consistent lighting
- test lights and correct any faults in light distribution.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- application and use of:
 - safety data sheets (SDS) when working with LED components
 - safe work method statements (SWMS) when installing LED systems into signs
- capacity of different surface types to absorb or reflect LED light
- electrical theory relevant to selecting and using LED technology for signs, including:
 - processes to calculate maximum driver loading for LED modules
 - regulation of electrical current in LED systems
- principles and application of design and layout theory relevant to sign manufacture, including:
 - balance
 - colour and colour harmony
 - contrast
- use, application and limitations of red, green and blue (RGB) colour system in LED signs
- limitations of sign manufacturer's role when working with electrical components, including licensing and regulatory requirements applicable to working with electricity
- pitch as it relates to positioning LED modules in fabricated letters and light boxes
- requirements for working safely around power sources, services and assets
- techniques for evaluating and using:
 - LED systems and packages
 - LED components
- uses, applications and limitations of LED technology for illuminating signs, including:
 - colour types and limitations
 - components
 - durability
 - semi-conductor chip technology characteristics
 - systems and system packages
- processes to manage heat generated by LED
- terminology used in manufacture of signs.

Assessment Conditions

Suitable assessment of performance requires:

- equipment and tools:
 - as listed in the range of conditions
- materials:
 - as listed in the range of conditions
- specifications:
 - fabricated letters as specified in the performance evidence
 - light box as specified in the performance evidence
 - SDS
 - SWMS

- contingencies:
 - processes to identify and rectify faults in LED systems and uneven distribution of light
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3012 Fabricate signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces non-equivalent CPCCSI2005A Fabricate signage and CPCCSI3002A Use rotary router.

Application

This unit of competency specifies the outcomes required to fabricate signs using acrylic sheets and metal framing.

Fabricated signs are used for a range of purposes, including light boxes, point of sale product trays, monoliths, pylons and individual letters.

The unit supports sign manufacturers who fabricate custom-made signs in response to client design requirements.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- | | | |
|---|-------------------------------------|--|
| 1 | Plan and prepare to fabricate sign. | <p>1.1 <i>Job requirements</i> are identified from work instructions and client briefs, confirmed, and applied to planning and preparation.</p> <p>1.2 Client-approved design specifications are sourced and confirmed.</p> <p>1.3 <i>Tools and equipment</i> are selected, checked for serviceability according to manufacturer recommendations, and any faults are rectified or reported before starting work.</p> <p>1.4 Selected tools and equipment are connected and configured ready for operation.</p> <p>1.5 Materials are selected and required quantities calculated.</p> <p>1.6 Required materials are sourced and checked to be free of imperfections.</p> <p>1.7 Specialist skills required to ensure structural integrity of fabricated sign are identified and sourced.</p> <p>1.8 <i>Health and safety requirements</i> are identified and planned according to schedule of tasks.</p> |
| 2 | Manufacture sign elements. | <p>2.1 Cutter types and their applications are identified for the specified job.</p> <p>2.2 Sourced materials are cut according to design specifications using CAD/CAM cutting tools and equipment and minimising waste.</p> <p>2.3 Light weight metals are formed according to design specifications using tools and equipment according to job requirements.</p> <p>2.4 Heating tools and equipment are used to form acrylic sign components safely and to job specifications.</p> |

- | | | | |
|---|---------------------------|-----|---|
| 3 | Assemble and secure sign. | 3.1 | Fastenings and fixings are securely attached to sign according to job specifications. |
| | | 3.2 | Sign is correctly assembled using fastenings, fixings and techniques. |
| 4 | Finish sign. | 4.1 | Sign is trimmed and finished to required quality standards and client expectations. |
| | | 4.2 | Sign is checked for accuracy and quality against client requirements and design specifications, and imperfections are rectified. |
| | | 4.3 | Structural integrity of sign is tested by specialists and confirmed according to job requirements. |
| | | 4.4 | Finished sign is cleaned for final presentation and stored safely, for collection or installation. |
| 5 | Clean up. | 5.1 | Work surface area is cleaned and waste materials are sorted and removed according to statutory and regulatory authority requirements. |
| | | 5.2 | Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • respond to feedback on meeting client requirements and quality expectations when fabricating signs.
Numeracy skills to:	<ul style="list-style-type: none"> • perform measurements to inform calculations of materials required to fabricate signs.

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Oral communication skills to:	<ul style="list-style-type: none">clarify job requirements and expectations with client and colleagues.
Reading skills to:	<ul style="list-style-type: none">identify and interpret manufacturer specifications for tools, equipment and materials used in fabricating signsread and interpret client briefs and work instructions.
Writing skills to:	<ul style="list-style-type: none">report faults in tools and equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Job requirements</i> must include:	<ul style="list-style-type: none">type of fabricated sign to be manufacturedtimeframes for production.
<i>Tools and equipment</i> must include:	<ul style="list-style-type: none">CAD/CAM software appropriate for cutting materialsrouting systems.
<i>Health and safety requirements</i> must include:	<ul style="list-style-type: none">selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practicesemergency procedures, including:<ul style="list-style-type: none">evacuationfirst aidlocation and use of firefighting equipmenthazard identification and risk control procedurescontents of and terms used in safety data sheets (SDS) and safe work method statements (SWMS) for the safe use of tools and equipment

- workplace environmental requirements.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3012 Fabricate signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces non-equivalent CPCCSI2005A Fabricate signage and CPCCSI3002A Use rotary router.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must fabricate three different signs as follows:

- a lower case letter 'b' in Clarendon font, using acrylic sheeting, with a minimum 50 mm return and 300 mm height
- a letter 'D' in Helvetica font, using stainless steel or aluminium, with a minimum 50 mm return and 300 mm height
- an aluminium light box with a minimum 300 mm acrylic front and back panel with a 100 mm edge; with the front and back of the light box being acrylic with a minimum of 4.5 mm thickness.

In doing the above work, the person must use at least three of the following tools and equipment:

- acrylic glues and heating equipment
- battery drill
- CAD/CAM routing equipment
- glass marking pencil
- guillotine
- metal ruler or tape measure
- welding tools and equipment
- scribe
- square
- surface cutting equipment.

For each sign to be fabricated, the person must:

- identify the job requirements for the sign, noting instructions from design specifications or client discussions, including durability and longevity requirements, purpose and location for final sign, size and material requirements
- select and prepare tools, equipment and materials to fabricate the sign according to client requirements
- select, correctly fit, and use personal protective equipment (PPE) relevant to the task
- accurately calculate required material quantities
- safely and accurately measure and cut materials to size, minimising waste
- fabricate and assemble the sign according to client requirements, maintaining safety and quality standards
- trim and clean the sign, check for imperfections, and rectify any faults prior to finalising sign
- store sign safely, ready for client inspection and installation
- clean the work area and dispose of, or identify for recycling and re-use, any waste materials.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- fabrication techniques used when working with acrylic
- folds and tolerances of light weight metals used in fabricating signs
- techniques for using rotary routers and other tools when cutting materials used in fabricating signs
- types, characteristics and applications of high and medium impact acrylic
- statutory and regulatory authority requirements, particularly those relating to:
 - removal of waste products
 - storage of chemicals and materials
 - work health and safety relevant to fabricating signs
- techniques used to weld aluminium and galvanised steel up to 3 mm in thickness
- types, uses and limitations of:
 - different extrusion systems used in sign manufacture
 - modular directory systems used in sign manufacture
- purpose and application of the following when using tools, equipment and materials to fabricate signs:
 - safety data sheets (SDS)
 - safe work method statements (SWMS)
- use of manufacturer specifications when using tools, equipment and materials to fabricate signs.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:

- tools and equipment as specified in the performance evidence
- materials:
 - acrylic sheets
 - stainless steel or aluminium sheeting as specified by the task
 - PPE: gloves and safety glasses
- specifications:
 - client brief or work instructions detailing job specifications of sign to be fabricated, including size, purpose, colour, material selection, durability and quality requirements of final sign
 - work instructions
 - manufacturer instructions and specifications for tools, equipment and materials used in fabricating signs
 - relevant SDS
- physical conditions:
 - workshop with suitable lighting and facilities for the fabrication of signs
- relationship with client:
 - check and confirm job requirements
- relationships with team members:
 - work may be conducted alone or as part of a team
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3013 Paint letters and decorative effects for signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI2006A Signwrite to simple forms and CPCCSI3003A Signwrite to decorative forms.

Application

This unit of competency specifies the outcomes required to manually paint signs on surfaces, comprised of various letter types and graphics. It covers setting out the sign to scale from a smaller design template using different layout methods; selecting and using tools and equipment to paint letters and graphics; and using brush strokes, techniques and decorative effects to achieve the desired result.

The unit supports sign manufacturers who produce customised signs that are painted directly on to surfaces for a range of purposes, including advertising boards and retail signs.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1	Plan and prepare work.	<p>1.1 Job requirements are identified from drawings, specifications, instructions and client briefs, confirmed, and applied to planning and preparation.</p> <p>1.2 Work site is assessed and scaffolding requirements are identified and installed according to statutory and licensing requirements.</p> <p>1.3 <i>Health and safety requirements</i> are identified and applied to planning.</p> <p>1.4 Sequence of tasks is determined and confirmed with relevant personnel.</p> <p>1.5 <i>Tools and equipment</i> are selected to carry out tasks according to job requirements, checked for serviceability, and faults are rectified or reported before starting work.</p> <p>1.6 Colour selection is determined, consistent with job requirements.</p>
2	Lay out sign.	<p>2.1 Size and dimensions of sign to be painted are calculated according to sign design and job requirements.</p> <p>2.2 Layout method is selected according to size and scale of the work and is implemented.</p>
3	Produce lettering and graphics.	<p>3.1 Surface is prepared according to job specifications.</p> <p>3.2 Letters are painted on to surface using tools, equipment and sign-writing techniques according to job requirements.</p> <p>3.3 Letter spacing is consistently applied according to job requirements.</p> <p>3.4 Errors in paint application are identified and rectified</p>

through the sign-writing process.

3.5 ***Decorative effects*** are applied to letters according to job requirements.

3.6 Graphics are painted on to surface using tools, equipment and brush techniques according to job requirements.

4 Clean up.

4.1 Finished sign and surrounding surface environment are cleaned and waste materials removed according to statutory and regulatory authority requirements.

4.2 Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • transfer key principles and techniques of painting decorative effects when working with different sign designs.
Numeracy skills to:	<ul style="list-style-type: none"> • measure surface and perform calculations to accurately identify required surface area for design • calculate scale and dimensions of final sign from drawings and apply to layout processes for sign-writing.
Oral communication skills to:	<ul style="list-style-type: none"> • enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand.
Reading skills to:	<ul style="list-style-type: none"> • interpret a range of familiar workplace documentation, including hand drawings, manufacturer specifications and instructions.
Writing skills to:	<ul style="list-style-type: none"> • report faults in tools and equipment to manufacturers and other relevant personnel.

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
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Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Health and safety requirements must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
 - evacuation
 - first aid
 - location and use of firefighting equipment
- hazard identification and risk control procedures
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - traffic control
 - work site visitors and the public
 - working at heights
 - working in confined spaces
 - working in proximity to others
 - use of machines
 - use of tools and equipment
- workplace environmental requirements.

Tools and equipment include:

- cutting knives
- mahl sticks
- oils appropriate to the application
- paint pots
- sign-writing pencils, pens and brushes
- stirring sticks
- tape measures and rulers
- tapes.

- Decorative effects* must include:
- three dimensional (3-D)
 - colour effects
 - shading.

Unit Mapping Information

CPCCSI2006A Signwrite to simple forms

CPCCSI3003A Signwrite to decorative forms

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3013 Paint letters and decorative effects for signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI2006A Signwrite to simple forms and CPCCSI3003A Signwrite to decorative forms.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must produce four hand-painted signs using both simple and decorative lettering.

The signs must be produced to scale and measure a minimum of 1 square metre for at least two of the following surfaces:

- glass
- masonry
- metals
- plastics
- wood.

One of the above hand-painted signs must include a small graphic logo with at least four different colours.

A different layout method must be used for each of the above signs, ensuring that the following four methods are used in total:

- computer-generated
- direct on to substrate
- overhead projection
- pounce method.

In doing the above work, the person must demonstrate:

- correct use of techniques to measure, and calculate and apply scale and dimension when producing the final sign
- correct selection and use of brushes, paints and brush techniques to produce job requirements
- correct preparation of paints and other tools and equipment
- application of health and safety requirements
- assessment of own work throughout the process, and identification and rectification of faults in painting letters and decorative effects.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- characteristics, style and sign-writing techniques for simple alphabets, including:
 - block letters
 - sans serif alphabets
- characteristics, style and sign-writing techniques for decorative alphabets, including:
 - construction of formal and informal alphabet scripts
 - freestyle alphabets
 - serif alphabets
- methods for calculating and applying dimensions and scale when laying out signs
- contents of and terms used in safe work method statements (SWMS) applicable to sign-writing to decorative forms
- principles of design applicable to lettering, including:
 - theory of letter writing
 - layout of various types of lettering
- relevant Australian standards, including:
 - AS 2311 General workmanship – painting
 - AS 2700 Colour standards for general purposes
 - AS 1530.3 Fire retardant systems
 - AS 1319 Safety signs for the occupational environment
- purpose and application of manufacturer specifications when working with paints and chemicals used to sign write decorative forms
- statutory and regulatory authority requirements relating to painting letters and decorative effects for signs, particularly those relating to:
 - removal of waste products
 - storage of chemicals and materials
- techniques to produce layout accurately to balanced design
- terminology and use of abbreviations in the signs and graphics industry.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - paint pots
 - brushes
- materials:
 - paints
 - pencils
 - sign substrates
- contingencies:
 - errors in paint application or brush techniques to be identified and corrected during the work
- specifications:
 - Australian standards:
 - AS 2311 General workmanship – painting
 - AS 2700 Colour standards for general purposes
 - AS 1530.3 Fire retardant systems
 - AS 1319 Safety signs for the occupational environment
 - design of sign to be produced, supplied on A4 sheet of paper and showing colours, style and quality requirements of sign
 - substrate of suitable type and size, as specified in the performance evidence
- physical conditions:
 - may be indoors or outdoors
- relationship with client:
 - confirm job requirements
- relationships with team members:
 - work may be conducted alone or with others
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3014 Manufacture gas-charged glass-formed illuminated signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3014A Manufacture gas-charged glass-formed illuminated signage.

Application

This unit of competency specifies the outcomes required to form glass tubes into specific shapes, fill them with gas, and provide a source of power to the tubes to produce illuminated signs commonly referred to as neon signs. It covers using tools and equipment to shape the glass tubes, and then attaching electrodes and pumping gas through the tubes before sealing and powering up the signs for display. It also covers installing the sign to a backing for display purposes and maximum visual effect.

The unit supports sign manufacturers who produce illuminated signs using neon gas.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- | | | | |
|---|--------------------------------------|-----|---|
| 1 | Plan and prepare work. | 1.1 | Job requirements are identified from drawings and specifications. |
| | | 1.2 | Sequence of tasks required is determined and confirmed with relevant personnel. |
| | | 1.3 | Tools and equipment are selected to carry out tasks according to job requirements, checked for serviceability, and faults are rectified or reported before starting work. |
| | | 1.4 | <i>Health and safety requirements</i> are identified and applied to planning. |
| 2 | Mark out design. | 2.1 | Design is set out to scale on fire retardant sheeting using layout methods according to job requirements. |
| | | 2.2 | Sections are calculated and marked out to design specifications. |
| | | 2.3 | Joint locations are determined from layout and marked out on pattern. |
| | | 2.4 | Electrodes are marked out to indicate double backed or right angled position. |
| 3 | Bend glass. | 3.1 | Glass is heated over a gas flame until pliable. |
| | | 3.2 | Glass is bent to form shape consistent with pattern and specifications, and any errors in shaping are rectified. |
| 4 | Attach electrodes and connect glass. | 4.1 | Electrodes are attached to pattern specification and requirements of Australian standards. |
| | | 4.2 | Glass tubing is connected using procedures and techniques according to job requirements. |

- | | | | |
|---|------------------------------------|-----|---|
| 5 | Prepare glass for lighting system. | 5.1 | Pumping station is activated and section is connected to pumping station according to job requirements and safety procedures. |
| | | 5.2 | Glass is vacuumed and pumped with gas using equipment and materials consistent with job requirements. |
| | | 5.3 | Glass is sealed and bombarded using equipment consistent with job requirements and industry standards. |
| | | 5.4 | Glass is cooled safely and aged according to job requirements. |
| | | 5.5 | Neon sections are tested to determine transformer loadings according to Australian standards and safety procedures. |
| | | 5.6 | Doubled sections of glass are blackened to form design shape. |
| 6 | Secure finished sign and clean up. | 6.1 | Neon glass sign is securely attached to panel using attachments and supports according to job requirements. |
| | | 6.2 | Sign and surrounding surface area are cleaned and waste materials removed according to statutory and regulatory authority requirements. |
| | | 6.3 | Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill

Performance feature

- | | |
|---------------------|---|
| Learning skills to: | <ul style="list-style-type: none"> • transfer key principles and techniques of heating and forming glass tubes to form and join glass sections to new designs. |
|---------------------|---|

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Numeracy skills to:	<ul style="list-style-type: none">• measure and calculate lengths and widths to set out sign design according to scale.
Oral communication skills to:	<ul style="list-style-type: none">• use questioning techniques to identify and confirm client requirements, share information, listen and understand.
Reading skills to:	<ul style="list-style-type: none">• read and interpret a range of information relating to the safe and appropriate use of tools and equipment for heating and shaping glass over a live flame, including safe work method statements (SWMS) and manufacturer specifications.
Writing skills to:	<ul style="list-style-type: none">• report faults in tools and equipment to manufacturer and relevant personnel in short, simple reports.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Health and safety requirements</i> must include:	<ul style="list-style-type: none">• selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices• emergency procedures, including:<ul style="list-style-type: none">• evacuation• first aid• location and use of fire-fighting equipment• hazard identification and risk control procedures• safe operating procedures, including the conduct of operational risk assessment and treatments associated with:<ul style="list-style-type: none">• concealed services (water, power and gas)• lighting• restricted access barriers• work site visitors and the public
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- working in confined spaces
- working in proximity to others
- use of gas and live flame
- use of high voltage electricity
- use of machines
- use of tools and equipment
- workplace environmental requirements.

Unit Mapping Information

CPCCSI3014A Manufacture gas-charged glass-formed illuminated signage

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3014 Manufacture gas-charged glass-formed illuminated signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3014A Manufacture gas-charged glass-formed illuminated signage.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must manufacture two different gas-charged glass-formed illuminated signs as follows:

- one sign must contain a directional symbol, such as an arrow
- one sign must consist of at least three words written in script lettering and sans serif font, using three different colours.

In doing the above work, the person must:

- work, shape and join the glass tubed sections safely and accurately to form the required shapes or letters
- select and use relevant tools and equipment to handle and form the glass
- safely attach required number of electrodes and connect glass tubing
- prepare the glass and pump gas to the glass assembly safely
- bombard, cool and age the glass to specifications
- affix each finished sign to a panel measuring a minimum 400 mm length x 300 mm height.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- statutory and regulatory authority requirements relating to safe handling of materials, including:
 - removal of waste products
 - storage of chemicals and materials

- key features of drawings and specifications of gas-charged glass-formed signs, including dimensions, symbols and abbreviations
- methods and techniques to:
 - shape and form glass
 - pump gas into glass
- processes to measure and set out when preparing to manufacture gas-charged illuminated signs, including applying direct and indirect layout methods
- Australian standards appropriate to manufacturing gas-charged illuminated signs, including:
 - AS 2508.2.012 Safe storage and handling; information cards for hazardous materials
 - AS 3100 Approval and test specification – General requirements for electrical equipment
 - AS 3953 Loading guide for dry-power transformers
 - types and characteristics of fonts and lettering styles used in the manufacture of signs
- safety procedures required when working with live flame and gas
- terminology used in sign manufacture
- types and characteristics of gas-charged glass-formed illuminated signs
- types, characteristics and correct handling procedures for materials used in the manufacture of gas-charged glass-formed illuminated signs
- types and uses of electrodes and transformers when manufacturing gas-charged glass-formed illuminated signs
- purpose and application of the following when working with tools and equipment used in the manufacture of gas-charged glass-formed illuminated signs:
 - safety data sheets (SDS)
 - safe work method statements (SWMS).

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - glass heaters
 - tongs
- materials:
 - custom wood panel measuring at least 400 mm in length x 300 mm in height
 - electrodes
 - fastenings and fixings used to attach sign components
 - glass tubes
 - neon gas
 - transformers
- contingencies:
 - identify and rectify faults in illuminated signs
- specifications:

- Australian standards:
 - AS 2508.2.012 Safe storage and handling; information cards for hazardous materials
 - AS 3100 Approval and test specification – General requirements for electrical equipment
 - AS 3953 Loading guide for dry-power transformers
- SDS for materials used when manufacturing gas-charged illuminated signs
- SWMS
- relationship with client:
 - check and confirm design of glass shapes and job specifications
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3015 Produce airbrushed signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3015A Produce airbrushed signage.

Application

This unit of competency specifies the outcomes required to select and apply air brushes, inks, paints and application techniques to produce various forms of airbrushed signs.

The unit supports sign manufacturers who use traditional painting and airbrushing techniques to achieve a visual style of signs.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of

conditions.

- | | | | |
|---|--------------------------------------|-----|---|
| 1 | Plan and prepare work. | 1.1 | Job requirements are identified from drawings, specifications, instructions and client briefs, and confirmed. |
| | | 1.2 | Sequence of tasks is determined and confirmed with relevant personnel. |
| | | 1.3 | Colour is selected according to job requirements. |
| | | 1.4 | Tools and equipment are selected to carry out tasks according to job requirements, checked for serviceability, and faults are rectified or reported before starting work. |
| | | 1.5 | Surfaces are identified and prepared according to planned airbrush application. |
| | | 1.6 | <i>Health and safety requirements</i> are identified and planned according to schedule of tasks. |
| | | | |
| 2 | Apply masks. | 2.1 | Adhesive masks are prepared and used according to job requirements. |
| | | 2.2 | Hand-held templates are prepared and applied according to job requirements. |
| | | | |
| 3 | Apply inks or paints using airbrush. | 3.1 | Airbrush inks or paints are applied to surface using application techniques consistent with job requirements. |
| | | 3.2 | Light and shade effects are applied using techniques suitable to the selected medium. |
| | | 3.3 | Defects in application are identified and corrective action is taken. |
| | | 3.4 | Airbrush work is finalised according to job specifications. |
| | | | |
| 4 | Clean up and store equipment. | 4.1 | Airbrush and associated components and accessories are dismantled, checked, cleaned and maintained according to manufacturer recommendations and environmental |

requirements.

- 4.2 Airbrush inks, paints and solvents are stored safely according to manufacturer specifications and workplace requirements.
- 4.3 Work area is cleaned and waste materials are removed according to statutory and regulatory authority requirements.
- 4.4 Other tools and equipment, including personal protective equipment (PPE) are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • transfer key principles and techniques of airbrushing to new sign designs.
Numeracy skills to:	<ul style="list-style-type: none"> • calculate and apply scale to enlargements of sign designs.
Oral communication skills to:	<ul style="list-style-type: none"> • communicate clearly with client and others using verbal and non-verbal communication.
Reading skills to:	<ul style="list-style-type: none"> • interpret a range of familiar workplace documentation, including drawings, specifications and instructions from clients and others.
Writing skills to:	<ul style="list-style-type: none"> • produce legible lettering using ink or paint and brushes.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs

of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Health and safety requirements must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
 - evacuation
 - first aid
 - location and use of fire-fighting equipment
- hazard identification and risk control procedures
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - lighting
 - restricted access barriers
 - use of safety data sheets (SDS)
 - use of tools and equipment
 - work site visitors and the public
 - working in proximity to others
- workplace environmental requirements.

Unit Mapping Information

CPCCSI3015A Produce airbrushed signage

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3015 Produce airbrushed signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI3015A Produce airbrushed signage.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must produce two airbrushed signs as follows:

- one head and shoulders portrait of a person, measuring at least 600 x 900 mm, using at least six different colours, and demonstrating the use of texture, gradient and line work
- one graphic produced on a motor vehicle bonnet, including the use of at least six different colours, and demonstrating the use of adhesive masks to accurately produce edge definition.

In producing the above work, the person must:

- interpret specifications for preparing and applying various airbrush techniques
- select, set up and check airbrush equipment and accessories prior to use
- identify defects associated with airbrush application and take corrective action
- maintain, clean, dismantle and reassemble airbrush, components and accessories
- prepare and apply a variety of masks to use in conjunction with airbrush techniques
- apply airbrush techniques using a variety of freehand and masked techniques
- comply with relevant safety and environmental legislation, regulations and codes of practice applicable to workplace operations.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- airbrushing terminology and use of abbreviations
- Australian standards applicable to airbrushing sign work, including AS 1319 Safety signs for the occupational environment
- characteristics and applications of different airbrushes used to airbrush signs, including:

- single action
- double action
- internal mix
- external mix
- characteristics and applications of different paint types used to airbrush signs, including:
 - oil-based
 - water-based
- principles and techniques of producing airbrushed signs, including application of:
 - freehand techniques
 - geometric shapes
 - graphics
 - lettering
- purpose and application of safety data sheets (SDS) when producing airbrushed signs
- statutory and regulatory authority requirements relevant to airbrushing sign work, including those relating to removal of waste products
- techniques for producing airbrushed signs through the choice of relevant materials
- types of airbrushes, components and accessories used in airbrushed sign work
- work health and safety (WHS) requirements and safe work methods applicable to airbrushing.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - air hose
 - air brushes, components and accessories
 - buckets
 - compressed air and leads
 - masks
 - measuring tapes and rules
 - paint pots
 - stencil knives
 - straight edges
- materials:
 - inks
 - masking materials
 - motor vehicle bonnet
 - paints
- specifications:
 - AS 1319 Safety signs for the occupational environment
 - SDS

- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3016 Prepare surfaces for signs

Modification History

Release 1.

This version first released with CPC Construction and Property Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI2003A Prepare surfaces for signage.

Application

This unit of competency specifies the outcomes required to ensure surfaces are prepared and ready for fixing signs. The unit covers assessing surfaces, which can include metals, plastics, brick and plasterboard walls; identifying the extent of preparation required; selecting and preparing equipment; and applying materials to the surface safely and effectively, minimising damage to surrounding areas.

The unit supports sign manufacturers who install signs in a range of indoor and outdoor settings.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

1	Plan surface preparation.	<p>1.1 Job requirements, including type of surface, are identified from drawings, specifications and instructions and type, and confirmed.</p> <p>1.2 <i>Health and safety requirements</i> are assessed and applied to planning.</p> <p>1.3 <i>Tools, equipment</i>, paint systems and materials are selected to carry out tasks consistent with job requirements, and faults are rectified or reported before starting work.</p> <p>1.4 Drop sheets are placed if required to protect floor and surrounding areas.</p> <p>1.5 <i>Personal protective equipment</i> (PPE) is sourced according to manufacturer specifications, and health and safety and workplace requirements.</p> <p>1.6 Signs and barricades are selected and installed according to health and safety and workplace requirements.</p>
2	Clean and prime surface.	<p>2.1 Condition of surface is assessed.</p> <p>2.2 Surface is roughly sanded according to job requirements.</p> <p>2.3 Surface is <i>cleaned</i> to remove grease and dirt and allowed to dry.</p> <p>2.4 Undercoat is applied to surface and allowed to dry according to manufacturer specifications.</p> <p>2.5 Primer is applied to surface and allowed to dry according to manufacturer specifications.</p>
3	Apply paint.	<p>3.1 <i>Paint applicator</i> compatible with coating type is selected and prepared according to manufacturer specifications.</p>

- 3.2 Spray gun and air compressor, if required, are set to manufacturer specifications and correct viscosity of paint is determined for specified application.
 - 3.3 Coating is applied evenly over the surface area and defects in application are identified and rectified.
- 4 Clean up.
- 4.1 Paint applicator is cleaned using correct cleaning products and according to workplace procedures and manufacturer specifications.
 - 4.2 Surface and surrounding work area are cleaned using correct solvents and in line with safety and environmental requirements.
 - 4.3 Waste materials are handled and removed according to statutory and regulatory authority requirements.
 - 4.4 Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none"> • assess the nature of preparation required for new and challenging surfaces.
Numeracy skills to:	<ul style="list-style-type: none"> • calculate material quantities required to prepare the specified surface area.
Oral communication skills to:	<ul style="list-style-type: none"> • clarify job requirements and expectations with client and colleagues.
Reading skills to:	<ul style="list-style-type: none"> • identify and interpret manufacturer specifications for tools, equipment and materials used when preparing surfaces for signs.

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill**Performance feature**

- Writing skills to:
- report faults in tools and equipment to manufacturers and other relevant personnel in short, simple reports.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Health and safety requirements must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
 - evacuation
 - first aid
 - location and use of fire-fighting equipment
- hazard identification and risk control procedures
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - concealed services (water, power and gas)
 - lighting
 - restricted access barriers
 - traffic control
 - working at heights
 - work site visitors and the public
 - working in confined spaces
 - working in proximity to others
 - use of machines
 - use of tools and equipment
- workplace environmental requirements.

Tools and equipment must include at least

- air compressor
- deburring tools

- two of the following:
- roller sleeve
 - ruler and marking tools
 - sanding equipment.

- Personal protective equipment*** must include:
- gloves
 - goggles
 - mask.

- Cleaners*** used must include one or more of the following:
- alcohol
 - garnet paper
 - methylated spirits
 - mineral turpentine
 - thinners
 - wax and grease remover
 - wet and dry sandpaper.

- Paint applicator*** must include:
- brushware
 - roller
 - spray gun.

Unit Mapping Information

CPCCSI2003A Prepare surfaces for signage

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3016 Prepare surfaces for signs

Modification History

Release 1.

This version first released with CPC Construction and Property Services Training Package Version 2.

Revised unit of competency. Replaces superseded equivalent CPCCSI2003A Prepare surfaces for signage.

Performance Evidence

A person who demonstrates competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must safely prepare the following surfaces each measuring at least one square metre, in readiness for application of signs:

- brick wall
- gyprock wall
- metal
- plastic.

In doing the above work, the person must:

- use appropriate sanding and cleaning techniques for each surface
- select, prepare and apply correct undercoat and primer for a painted surface
- apply paint using each of following application methods:
 - brush paint
 - roll paint
 - spray paint
- identify and rectify defects in paint application.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- range of coating types and their characteristics, including:
 - acrylic lacquers and their thinner or reducer
 - clear finishes and their thinner
 - oil-based paints and their solvents

- spraying enamel and its thinner
- two-pack paints and their thinner
- water-based paints and their thinner
- range of undercoats and primers and their application to different surfaces, including:
 - brick
 - plasterboard
 - metals
 - plastics
- purpose and application of the following when preparing surfaces for signs:
 - manufacturer specifications relating to paint and other products used in surface preparation
 - safety data sheets (SDS)
 - safe work method statements (SWMS)
- safety and environmental legislation, regulations and codes of practice applicable to working with paint and other products used in surface preparation
- statutory and regulatory authority requirements, particularly those relating to:
 - removal of waste products
 - storage of chemicals.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - air compressor
 - brushware
 - ladders or other equipment used to provide safe access to work area
 - roller and roller sleeve
 - spray gun
- materials:
 - cleaners as listed in the range of conditions
 - primers appropriate to the surface
 - undercoats appropriate to the surface
- specifications:
 - range of surfaces to prepare as specified in the performance evidence
 - work instructions or drawings appropriate to the task
- physical conditions:
 - work may be conducted indoors and outdoors
- relationship with client:
 - sufficient to check and confirm job requirements
- relationships with team members:

- work may be conducted alone or with others
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCSG3017 Erect and install signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI2007A Apply fasteners and fixings.

Application

This unit of competency specifies the outcomes required to erect and install signs to surfaces and structures, safely and according to client requirements.

The unit supports installers of signs working in a range of settings who must ensure appropriate permits are in place prior to erecting a sign, that the surface is suitable for installing the sign, and that appropriate fasteners and fixings have been selected for the task.

Licensing, legislative, regulatory or certification requirements apply to this unit in some States. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Pre-requisite Unit

Nil

Competency Field

Signs and graphics

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the Performance criteria describe the performance needed to

- essential outcomes. demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.
- 1 Plan and prepare for installation processes.
 - 1.1 Job requirements are identified from work instructions and confirmed with relevant personnel.
 - 1.2 Characteristics and dimensions of sign are identified and weight of sign is calculated and applied to planning.
 - 1.3 Research is undertaken to determine the need for local authority permits to install sign, client is informed, and relevant permissions obtained or sighted before starting work.
 - 1.4 Detailed installation drawings are obtained and confirmed.
 - 1.5 ***Tools and equipment*** are selected to carry out tasks according to job requirements, checked for serviceability, and faults are rectified or reported before starting work.
 - 1.6 ***Health and safety requirements*** are identified and applied to planning.
 - 1.7 Sequence of tasks is determined and confirmed with relevant personnel.

 - 2 Assess installation site.
 - 2.1 Work site is assessed and need for engineering risk assessment is identified with relevant personnel and obtained where appropriate to confirm structural integrity of supporting background before starting work.
 - 2.2 Site plans are sourced and location of assets, services and infrastructure beneath and around installation site are identified.
 - 2.3 Condition of surface is assessed and need for remedial work is identified.
 - 2.4 Remedial work if required is undertaken or referred to relevant personnel for action according to job requirements.

- | | | | |
|---|--|-----|--|
| 3 | Prepare to secure sign. | 3.1 | Surface is cleaned and prepared according to planned material application. |
| | | 3.2 | Sign is positioned on site, checked for quality, and identified faults are rectified before installation. |
| 4 | Secure sign to surface, as required. | 4.1 | Location for sign is confirmed against drawings and position is marked out for installation. |
| | | 4.2 | Marked locations are checked to be level and errors in measurements and calculations are rectified before sign is installed. |
| | | 4.3 | Sign is positioned and secured with <i>fasteners and fixings</i> according to manufacturer specifications, specified tolerances, job requirements and safety procedures. |
| 5 | Secure freestanding sign, as required. | 5.1 | Location for support materials is marked out on site according to job requirements. |
| | | 5.2 | Footings for sign are created to specified depth according to job requirements and sign characteristics. |
| | | 5.3 | Anchor bolts are inserted and holes are filled with concrete and finished to job requirements. |
| | | 5.4 | Support poles are inserted, fixed into position, and checked for levelling using levelling tools. |
| | | 5.5 | Sign is secured to poles using specified fastenings and fixings, and checked for stability, and faults are rectified or reported to relevant personnel. |
| 6 | Finalise work and clean up. | 6.1 | Installation is checked to ensure it is level, and faults in installation process are identified and rectified or reported to relevant personnel. |
| | | 6.2 | Appropriate colour and type of paint are applied to visible fastenings and fixings to a professional standard and according to job requirements. |
| | | 6.3 | Sign and surrounding area are cleaned and waste materials are removed according to statutory and |

regulatory authority requirements.

- 6.4 Tools and equipment, including personal protective equipment (PPE), are cleaned, maintained and stored according to workplace requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Learning skills to:	<ul style="list-style-type: none">source and apply information relating to council and other permissions required for some sign installations.
Numeracy skills to:	<ul style="list-style-type: none">take accurate measurements and calculate weights and load tolerances.
Reading skills to:	<ul style="list-style-type: none">interpret manufacturer specifications relating to use of fasteners and fixings used to erect signsinterpret job requirements, installation instructions and diagrams relating to erecting and installing signs.
Writing skills to:	<ul style="list-style-type: none">complete council and other regulatory authority documentation required as part of permit approval processesreport faults in tools and equipment to manufacturer and other relevant personnel using appropriate documentation and terminology.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Tools and equipment

- chamois
- drills

- must include:
- ladder
 - levelling tools
 - measuring tapes and rules
 - post hole digger
 - PPE suited to installing signs
 - touch-up paint.

Health and safety requirements must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
 - evacuation
 - first aid
 - location and use of fire-fighting equipment
- hazard identification and risk control procedures
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - concealed services (water, power and gas)
 - lighting
 - restricted access barriers
 - traffic control
 - work site visitors and the public
 - working in confined spaces
 - working in proximity to others
 - use of machines
 - use of tools and equipment
- workplace environmental requirements.

Fasteners and fixings must include:

- all of the following chemical products:
 - construction adhesive
 - injection systems
 - spin capsules
 - hammer-in capsules
- and five or more of the following:
 - electrical clips
 - nylon anchors
 - hollow wall anchors
 - plastic toggles
 - metal toggles
 - multi-clips

- lug anchors
- steel ferrule expanding bolts
- metal screws
- chipboard screws
- plasterboard screws.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCSG3017 Erect and install signs

Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI2007A Apply fasteners and fixings.

Performance Evidence

A person who demonstrates competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must erect and install two signs as follows:

- one sign must measure at least 1200 x 2400 mm, be constructed of aluminium no more than 5 mm thick, and be fixed using appropriate fixings and fastenings to one of the following surfaces:
 - acrylic
 - glass
 - masonry
 - metal
 - plasterboard
 - plastic
 - timber
- one sign must measure at least 1200 x 2400 mm, be constructed of aluminium no more than 5 mm thick, and be positioned as a freestanding sign to two aluminium posts or poles measuring no less than 90 x 90 mm.

In doing the above work, the person must:

- check and confirm the need for planning permissions to install the signs in specified location
- check and confirm the site for services and assets below ground
- assess the sign installation requirements relevant to the work site, identifying potential risks and hazards and demonstrating measures to mitigate potential work site risks and hazards

- ensure the structural integrity of the supporting background, including taking steps to ensure reinforcement is arranged if required
- follow safety procedures when erecting and installing above signs
- identify and select methods for erecting and installing above signs, including selecting tools, fasteners and fixings giving consideration to the characteristics of the signs
- prepare the work site for installation and install the signs according to job requirements.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- purpose and application of the following when erecting and installing signs:
 - safety data sheets (SDS)
 - safe work method statements (SWMS)
- effect of mechanical and chemical fixings and fastenings used to install signs on different surfaces
- load bearing specifications for a range of fastener and fixing measurements and calculations relating to material quantities
- relevant Australian and New Zealand standards in relation to the installation of signs, including:
 - AS/NZS 3832 Electrical installations – Cold-cathode illumination systems
 - AS 1319 Safety signs for the occupational environment
- statutory and regulatory authority requirements, particularly those relating to:
 - removal of waste products
 - storage of chemicals and materials
- types and uses of tools and equipment used for installing signs
- processes and practices for working safely around power sources, services and assets.

Assessment Conditions

Suitable assessment of performance requires:

- equipment:
 - a range of fasteners and fixings used for erecting and installing signs
 - a range of tools and equipment used for erecting and installing various types of signs:
 - chamois
 - drills
 - ladder
 - levelling tools
 - measuring tapes and rules
 - post hole digger
 - personal protective equipment suited to installing signs
 - touch-up paint

- materials:
 - one freestanding sign and one sign fixed to a surface
 - signs to be 1200 x 2400 mm, constructed of aluminium
 - signs to be installed
 - ready-mix concrete
- contingencies:
 - engineering risk assessment may be required to confirm structural integrity of supporting wall or structure
 - local authority planning permission may be required in certain settings and locations
- specifications:
 - Australian and New Zealand standards in relation to the installation of signs, including:
 - AS/NZS 3832 Electrical installations – Cold-cathode illumination systems
 - AS 1319 Safety signs for the occupational environment
 - SDS
 - SWMS
- physical conditions:
 - installation may be required in indoor and outdoor settings
- relationship with client:
 - sufficient contact to check and confirm requirements
- relationships with team members:
 - work may be undertaken alone or with others
- timeframe:
 - according to job requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWC3004 Install suspended ceilings

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from *CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry* to *CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry*.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Updated to reflect current industry terminology, tools and equipment.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 2.0.

Application

This unit of competency specifies the skills and knowledge required to install exposed and concealed suspended ceilings.

It includes setting out and installing ceiling suspension systems and installing lining material.

A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without close supervision.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | |
|------------------------------|--|
| 1 Plan and prepare. | 1.1 Read and interpret work instructions and plan sequence of work. |
| | 1.2 Plan all work to comply with laws and regulations, the National Construction Code (NCC), Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements. |
| | 1.3 Select and use personal protective equipment (PPE) for each stage of the task. |
| | 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. |
| | 1.5 Select tools and equipment, check for serviceability and report any faults that may affect the safe operation of the equipment, tag equipment and set aside. |
| | 1.6 Select materials required for task, calculate quantities, handle safely and prepare and position ready for use. |
| 2 Install suspension system. | 2.1 Set out ceiling grid and alignment levels for ceiling. |
| | 2.2 Fix suspension rods to underside of soffit and structural members with masonry anchors, bolts and screws at prescribed centres. |
| | 2.3 Assemble suspended framework and connect to suspension rods. |
| | 2.4 Fasten suspension system, check for looseness and rattles, and secure as required. |
| | 2.5 Fix bridging framework to both sides of service ducts to support suspension system. |
| 3 Install lining materials. | 3.1 Install lining materials according to design pattern set out in job drawings. |
| | 3.2 Cut edges of lining materials and conceal to match |

- pre-finished edges.
- 3.3 Provide openings and penetrations as shown in job drawings.
 - 3.4 Fix trims and beads at junctions with other building elements and surfaces.
- 4 Clean up.
- 4.1 Clear work area and dispose of, reuse or recycle materials.
 - 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' specifications.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and equivalent to CPCCWC3004A Install suspended ceilings

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWC3004 Install suspended ceilings

Modification History

Release 3 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.2.

Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Updated to reflect current industry terminology, tools and equipment.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 2.0.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by installing:

- one exposed suspended ceiling of minimum area of 10 square metres
- one concealed suspended ceiling of minimum area of 15 square metres.

Each of the suspended ceilings must include grid and support wires or rods, and a penetration to accommodate one or more of the following fittings:

- an air duct
- an exhaust system
- a support column or beam.

All work must be performed to the standard required in the workplace and must comply with Commonwealth and state/territory laws and regulations, national construction codes, Australian Standards, work health and safety (WHS) and environmental requirements, manufacturers' specifications, and workplace requirements.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- compliance requirements of the National Construction Code and Australian Standards for installing suspended ceilings

- quality policies and standards for installing suspended ceilings
- safety requirements for installing suspended ceilings, including personal protective equipment (PPE), job safety analyses, safe work method statements and safety data sheets
- environmental requirements for installing suspended ceilings
- methods to mitigate risks of seismic movement when installing suspended ceilings
- processes for reading and interpreting plans, drawings and specifications used when installing suspended ceilings
- purpose and application of the following when using tools, equipment and materials to install suspended ceilings
- suspended ceiling installation techniques and processes, including:
 - alignment levelling
 - anchors and bolts
 - droppers and suspension rods
 - furring channels
 - main beams, rails and runners
 - spacer bars
 - tracks and main tracks
 - reinforced concrete ceiling and floor slabs
 - steel ceiling and rod framing
 - timber and steel floor
 - timber ceiling and rod framing
- suspended ceiling materials and their preparation and applications, including:
 - fibre cement sheeting
 - infill panels, including:
 - acoustic
 - decorative timber
 - metal
 - two-pack
 - insulation materials
 - plasterboard
 - suspended ceiling components
- techniques for calculating material requirements for installing suspended ceilings
- types of tools and equipment for installing suspended ceilings.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed:

- in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques replicate construction workplace conditions, materials, activities, responsibilities and procedures
- using realistic tasks or simulated tasks, relevant specifications and work instructions, standard work practices, safety requirements and environmental constraints.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWHS1001 Prepare to work safely in the construction industry

Modification History

Release Comment

Version 1 Replaces superseded equivalent CPCCOHS1001A Work safely in the construction industry.

Application

This unit of competency specifies the mandatory work health and safety training required prior to undertaking construction work. The unit requires the person to demonstrate personal awareness and knowledge of health and safety legislative requirements in order to work safely and prevent injury or harm to self and others. It covers identifying and orally reporting common construction hazards, understanding basic risk control measures, and identifying procedures for responding to potential incidents and emergencies. It also covers correctly selecting and fitting common personal protective equipment (PPE) used for construction work.

This unit meets the general construction induction training requirements of:

- Part 1.1 Definitions and Part 6.5 of the Model Work Health and Safety Regulations;
- Division 11 of Part 3 of the Occupational Safety and Health Regulations 1996 for Western Australia; and
- Division 3 of Part 5.1 of the Occupational Health and Safety Regulations 2007 for Victoria.

It is expected that site-specific induction training will be conducted prior to conducting construction work.

Licensing, legislative, regulatory or certification requirements apply to this unit. Relevant work health and safety state and territory regulatory authorities should be consulted to confirm jurisdictional requirements.

Pre-requisite Unit

Nil

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.
<p>1. Identify health and safety legislative requirements of construction work.</p>	<p>1.1. Basic roles, responsibilities and rights of duty holders are identified and explained according to <i>jurisdictional health and safety legislative requirements</i>.</p> <p>1.2. Duty of care requirements are identified.</p> <p>1.3. Construction safe work practices are identified and explained.</p>
<p>2. Identify construction hazards and risk control measures.</p>	<p>2.1. Basic principles of risk management are identified.</p> <p>2.2. Construction hazards are identified and discussed.</p> <p>2.3. Purpose and use of PPE are identified and demonstrated.</p> <p>2.4. Measures for controlling hazards are identified.</p>
<p>3. Identify health and safety communication and reporting processes.</p>	<p>3.1. Health and safety documents are identified and discussed.</p> <p>3.2. Roles of designated health and safety personnel are identified and explained.</p> <p>3.3. Safety signs and symbols are identified and explained.</p> <p>3.4. Procedures for reporting hazards, incidents and injuries are identified.</p>
<p>4. Identify incident and emergency response</p>	<p>4.1. Procedures for responding to incidents and emergencies are identified and explained.</p> <p>4.2. Procedures for accessing first aid are identified.</p>

procedures.

- 4.3. Types and purpose of fire safety equipment are identified and discussed.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Numeracy skills to:	<ul style="list-style-type: none"> • locate and recognise numbers commonly used in safety signs.
Oral communication skills to:	<ul style="list-style-type: none"> • ask questions to clarify instructions • listen to instructions to identify key safety information • tell another person about a construction problem or hazard.
Reading skills to:	<ul style="list-style-type: none"> • follow simple pictorial safety instructions • follow simple safety instructions that are written in English.
Problem-solving skills to:	<ul style="list-style-type: none"> • select risk control measures.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Jurisdictional health and safety legislative requirements</i> must include at least one of the following state and territory Acts or their equivalent:	<ul style="list-style-type: none"> • Australian Capital Territory: Work Health and Safety Act 2011 • New South Wales: Work Health and Safety Act 2011 • Northern Territory: Work Health and Safety (National Uniform Legislation) Act 2011 • Queensland: Work Health and Safety Act 2011 • South Australia: Work Health and Safety Act 2012 • Tasmania: Work Health and Safety Act 2012 • Victoria: Occupational Health and Safety Act 2004 • Western Australia: Occupational Safety and Health Act 1984.
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Unit Mapping Information

Supersedes and is equivalent to CPCCOHS1001A Work safely in the construction industry

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCWHS1001 Prepare to work safely in the construction industry

Modification History

Release Comment

Version Replaces superseded equivalent CPCCOHS1001A Work safely in the construction
1 industry.

Performance Evidence

A person demonstrating competency in this unit must satisfy the requirements of the elements, performance criteria, foundation skills, and range of conditions of this unit, in addition to the specific performance and knowledge evidence described below.

The person must:

- identify and orally report two construction hazards
- orally explain how risk could be reduced or removed in relation to those two hazards
- select appropriate personal protective equipment (PPE) to control the risk
- orally explain basic procedures for responding to incidents and emergencies, including types and purpose of the following fire safety equipment:
 - fire blankets
 - fire extinguishers, including water, carbon dioxide, powder and foam
 - hose reels and mains
- identify and orally explain the meaning of required safety signs and symbols
- orally explain the purpose of job safety analyses (JSAs), safe work method statements (SWMS) and safety data sheets (SDS)
- orally explain the roles of the following designated health and safety personnel:
 - first aid officers
 - work health and safety representatives
 - work health and safety committee members
 - supervisors.

The person must also demonstrate correctly fitting to themselves the PPE listed below:

- eye protection
- hearing protection
- hard hat

- high visibility retro reflective vest.

Knowledge Evidence

A person must demonstrate knowledge of:

- basic duty of care, and the roles, rights and responsibilities of business owners and workers in relation to working safely while undertaking construction work
- basic meaning of the terms ‘hazard’ and ‘risk’
- basic principles of risk management, including the following five steps in order:
 - identify hazard
 - assess risk
 - consult and report
 - control hazard
 - review
- basic procedures for accessing first aid
- construction hazards, including those relating to:
 - asbestos
 - confined spaces
 - electrical: power lines, cords and equipment
 - excavations and trenches, including underground services
 - dust
 - falling objects
 - hazardous substances and dangerous goods
 - hot and cold work environments
 - manual handling
 - noise
 - plant and equipment operation
 - traffic and mobile plant
 - unplanned collapse
 - ultraviolet radiation
 - working at heights, including scaffolding
- construction work that requires a high risk work licence
- types, purpose and use of PPE used in construction, as specified in the performance evidence, and including safety footwear, harnesses and respiratory protection, and ultraviolet (UV) protective clothing and sunscreen
- construction emergencies, including:
 - chemical spill
 - fire
 - injury to personnel
 - structural collapse
 - toxic or flammable vapour emission

- vehicle or mobile plant accident
- construction incidents, including:
 - incidents resulting in personal injury or damage to property
 - near misses or dangerous occurrences that do not cause injury but may pose an immediate and significant risk to persons or property, and need to be reported so that action can be taken to prevent recurrence
- safe work practices that should be followed in construction work, including:
 - accessing and using site amenities for drinking water, hand washing and toilets
 - following safety procedures when performing work tasks and using equipment
 - identifying and reporting hazards, incidents and injuries in the workplace
 - keeping the work area clean, tidy and free from debris
 - not using or being affected by drugs and/or alcohol while at work
 - preventing bullying and harassment in the workplace
 - selecting and using required PPE
 - smoking only in designated areas
 - storing and removing waste and debris in designated areas
- meanings and symbols associated with construction safety signs, symbols and tags, including:
 - emergency information signs: exits, emergency equipment and first aid
 - fire signs: location of fire alarms and firefighting equipment
 - hazard signs and symbols: danger and warning
 - regulatory signs and symbols: prohibition, mandatory and limitation or restriction
 - safety and lockout tags: danger and out-of-service tags.

Assessment Conditions

The following must be present and available to learners during assessment activities:

- equipment:
 - all of the PPE listed in the performance evidence
- specifications:
 - state or territory Act relevant to the location of the learner, as specified in the range of conditions.

The assessment of performance evidence must be done by direct observation of the learner by an assessor, either by an assessor observing the learner physically and/or by an assessor observing the learner via audio and visual media in real time.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Assessors must hold the unit *CPCCOHS2001A Apply OHS requirements, policies and procedures in the construction industry*, or its successor.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Modification History

Release 1.

Supersedes and equivalent to CPCCOHS2001A Apply OHS requirements, policies and procedures in the construction industry.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Application

This unit specifies the outcomes required to carry out work health and safety (WHS) requirements through safe work practices in all on- or off-site construction workplaces.

It requires the performance of work in a safe manner through awareness of risks and work requirements, and the planning and performance of safe work practices with concern for personal safety and the safety of others.

The unit covers fundamental WHS requirements necessary to undertake work tasks within any sector in the construction industry. It includes the identification of hazardous materials, including asbestos, and compliance with legislated work safety practices. It does not cover removal of asbestos, which is a licensed activity.

It applies to workers in the construction industry.

This unit also relates directly to the general construction induction training requirements of the Model Work Health and Safety Regulations 2011 and relevant occupational health and safety regulations for Victoria and for Western Australia. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* covers these induction training requirements.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
<p>1. Identify and assess risks.</p>	<p>1.1 Identify, assess and report hazards in the work area to designated personnel.</p> <p>1.2 Report safety risks in the work area based on identified hazards, to designated personnel.</p> <p>1.3 Follow safe work practices, duty of care requirements and safe work instructions for controlling risks.</p> <p>1.4 Contribute to WHS, hazard, accident or incident reports in accordance with workplace procedures, Australian government and state or territory WHS legislation, and relevant information.</p>
<p>2. Identify hazardous materials and other hazards on work sites.</p>	<p>2.1 Correctly identify and, if appropriate, handle and use hazardous materials on a work site in accordance with legislative requirements, and workplace policies and procedures.</p> <p>2.2 Apply measures for controlling risks and construction hazards effectively and immediately.</p> <p>2.3 Use appropriate signs and symbols to secure hazardous materials that have safety implications for self and other workers, immediately they are identified.</p> <p>2.4 Identify asbestos-containing materials on a work site and report to designated personnel.</p>
<p>3. Plan and prepare for safe work practices.</p>	<p>3.1 Identify, wear, correctly fit, use and store correct personal protective equipment and clothing for each area of construction work in accordance with workplace procedures</p> <p>3.2 Select tools, equipment and materials, and organise tasks in conjunction with other personnel on site and in accordance with workplace procedures.</p> <p>3.3 Determine required barricades and signage, and erect at the appropriate site location.</p> <p>3.4 Apply material safety data sheets (MSDSs), job safety analyses (JSAs) and safe work method statements (SWMSs) relevant to the work to be performed.</p>
<p>4. Apply safe work practices.</p>	<p>4.1 Carry out tasks in a manner that is safe for operators, other personnel and the general community, in accordance with legislative requirements, and workplace policies and procedures.</p> <p>4.2 Use plant and equipment guards in accordance with manufacturers' specifications, work site regulations and Australian Standards.</p> <p>4.3 Follow procedures and report hazards, incidents and injuries</p>

	<p>to relevant authorities.</p> <p>4.4 Recognise and do not use prohibited tools and equipment in areas containing identified asbestos.</p> <p>4.5 Identify and follow requirements of work site safety signs and symbols.</p> <p>4.6 Clear and maintain work site area to prevent and protect self and others from incidents and accidents, and to meet environmental requirements.</p>
5. Follow emergency procedures.	<p>5.1 Identify designated personnel in the event of an emergency for communication purposes.</p> <p>5.2 Follow safe workplace procedures for dealing with accidents, fire and other emergencies, including identification and use, if appropriate, of fire equipment within scope of own responsibilities.</p> <p>5.3 Describe, practice and effectively carry out emergency response and evacuation procedures when required.</p> <p>5.4 Carry out emergency first aid treatment of minor injuries and, as soon as possible, accurately report treatment details to designated personnel.</p>

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCOHS2001A Apply OHS requirements, policies and procedures in the construction industry.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Modification History

Release 1.

Supersedes and equivalent to CPCOHS2001A Apply OHS requirements, policies and procedures in the construction industry.

The unit of competency was updated to the Standards for Training Packages 2012.

This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.

Performance Evidence

To demonstrate competency in this unit, a person must apply WHS requirements, policies and procedures on three separate and different occasions in the construction industry.

In doing this, the person must meet the performance criteria for this unit.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- jurisdictional work health and safety (WHS) and environmental legislation and regulations
- workplace requirements for undertaking all aspects of applying WHS requirements, policies and procedures in the construction industry including interpreting work orders and reporting problems
- procedures and policies for identifying and reporting hazards, safety risks and hazardous materials, including asbestos, in the workplace
- procedures for following safe practices when dealing with hazards and hazardous materials, and controlling risks associated with them
- use of appropriate protective equipment and clothing, choice of tools, use of barricades and signage, and the necessity of following relevant safety procedures as indicated
- methods of safely performing tasks in accordance with legislative requirements and workplace policies and procedures
- procedures for reporting hazards, incidents and injuries
- necessity for keeping work site clear of risks to prevent accidents and to meet environmental requirements
- policies and procedures to be followed in an accident, fire or other type of emergency.

Assessment Conditions

Assessors must satisfy the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- appropriate documents, materials, tools, equipment and personal protective equipment currently used in industry
- requirements of appropriate sections of legislation and regulations
- relevant workplace policies and procedures.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

BSBSUS211 Participate in sustainable work practices

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to measure, support and find opportunities to improve the sustainability of work practices.

The unit applies to individuals, working under supervision or guidance, who are required to follow workplace procedures and instructions. These individuals work in an environmentally sustainable manner within scope of competency, authority and own level of responsibility.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Sustainability

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Measure sustainable work practices	1.1 Identify sustainable work practices in own work role 1.2 Measure current usage of resources in own work role 1.3 Record and file resource usage documents 1.4 Identify resource inefficiencies from gathered information
2. Support sustainable work practices	2.1 Identify and comply with workplace sustainability procedures 2.2 Identify workplace environmental hazards according to environmental regulations and standards 2.3 Report any breaches and potential breaches to organisational personnel
3. Seek opportunities to	3.1 Identify areas of improvement to work practices in own work

ELEMENT	PERFORMANCE CRITERIA
improve sustainable work practices	<p>area</p> <p>3.2 Consult with colleagues and management to assess potential to improve sustainability of identified work practices</p> <p>3.3 Make suggestions for improvements to workplace practices in own work area</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Numeracy	<ul style="list-style-type: none"> Calculates basic metric measurements to determine resource usage
Reading	<ul style="list-style-type: none"> Recognises and interprets textual information to establish job requirements
Writing	<ul style="list-style-type: none"> Completes documents using required formats
Teamwork	<ul style="list-style-type: none"> Selects and uses appropriate conventions and protocols when communicating with co-workers in range of work contexts Collaborates and cooperates with others to achieve joint outcomes
Initiative and enterprise	<ul style="list-style-type: none"> Implements actions according to requirements, taking some responsibility for sequencing and timing of tasks Analyses current practices to identify opportunities for improvement
Self-management	<ul style="list-style-type: none"> Understands and adheres to legal and regulatory responsibilities related to own work
Technology	<ul style="list-style-type: none"> Uses main features and functions of digital tools to complete work tasks and access information

Unit Mapping Information

Supersedes and is equivalent to BSBSUS201 Participate in environmentally sustainable work practices.

Links

Companion Volume Implementation Guide is found on VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBSUS211 Participate in sustainable work practices

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- participate in at least three sustainable work practices.

In the course of the above, the candidate must:

- identify benefits of sustainable work practices and areas of improvement for sustainable practices in the workplace
- identify and apply sustainability legislation and organisational sustainability policies and procedures
- participate in and support discussions for improved resource efficiency processes
- identify, measure and document usage of resources
- collaborate with team members to develop suggestions for improving workplace sustainability practices.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- environmental and resource hazards and risks
- Australian and international standards for corporate social sustainability
- sustainability regulations and codes of practice applicable to own role
- organisational sustainability policies and procedures
- reporting channels and procedures to report breaches and potential issues
- advantages of sustainable practices in the workplace.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- documentation, information and resources on workplace environmental and resource efficiency
- sustainability legislation, regulations and standards.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBSUS411 Implement and monitor environmentally sustainable work practices

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to analyse and implement improvements to the environmental sustainability of work practices and monitor their effectiveness.

The unit applies to individuals with responsibility for the practices of a specific work area or who lead a work group or team.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Business Competence – Sustainability

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish sustainable work contexts	1.1 Identify and assess organisational compliance against environmental legislation, regulations and standards 1.2 Collect data on environmental efficiency in organisational systems and processes 1.3 Analyse data on environmental efficiency and current purchasing strategies and identify areas for improvement 1.4 Consult stakeholders and external data sources on sustainability best practice 1.5 Develop efficiency targets and methods to monitor outcomes
2. Implement sustainable	2.1 Identify and source tools to set efficiency targets

ELEMENT	PERFORMANCE CRITERIA
work practices	2.2 Implement and integrate efficiency targets with other operational activities 2.3 Support team members to identify possible areas for improved resource efficiency in work areas 2.4 Seek and act on feedback from stakeholders on implementation
3. Monitor performance of sustainable work practices	3.1 Assess outcomes using monitoring method developed 3.2 Document and communicate outcomes to key personnel and stakeholders 3.3 Identify changes required to targets and tools from strategies and improvement plans 3.4 Promote successful strategies in development of new efficiency targets

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Numeracy	<ul style="list-style-type: none"> Analyses numerical information to measure usage and calculates metric measurements, quantities and ratios and financial data using appropriate tools
Oral communication	<ul style="list-style-type: none"> Presents information and seeks advice using structure and language appropriate to audience Participates in discussions using listening and questioning to elicit the views of others and to clarify or confirm understanding
Reading	<ul style="list-style-type: none"> Identifies and analyses texts to determine legislative and regulatory requirements relevant to work area Reviews reported information to evaluate workplace strategies and improvement practices
Writing	<ul style="list-style-type: none"> Documents findings of investigations from written and oral sources according to organisational requirements Provides updates about progress using formats and language appropriate to the audience and context
Initiative and Enterprise	<ul style="list-style-type: none"> Identifies and follows legislative requirements and organisational policies and procedures associated with own role
Teamwork	<ul style="list-style-type: none"> Selects and uses appropriate conventions and protocols when communicating with internal and external stakeholders to seek or share information

Skill	Description
	<ul style="list-style-type: none"> Collaborates and consults with a range of stakeholders to achieve shared understanding of individual roles in meeting objectives
Planning and organising	<ul style="list-style-type: none"> Develops plans to manage routine and non-routine tasks for own work group with an awareness of how they contribute to the broader organisation Uses systematic, analytical processes to set environmental targets, gather relevant information, identify and evaluate alternative approaches Evaluates outcomes of decisions to identify opportunities for improvement
Technology	<ul style="list-style-type: none"> Uses the main features and functions of digital tools to complete work tasks and access information

Unit Mapping Information

Supersedes and is equivalent to BSBSUS401 Implement and monitor environmentally sustainable work practices.

Supersedes but is not equivalent to:

- BSBSUS402 Implement an environmental management plan
- BSBSUS403 Measure, monitor and reduce carbon emissions
- BSBSUS404 Assess, implement, monitor and report on waste management
- BSBSUS405 Assess, monitor and reduce water use
- BSBSUS406 Identify and apply sustainability rating tools.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBSUS411 Implement and monitor environmentally sustainable work practices

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- implement and monitor at least three environmentally sustainable work practices.

In the course of the above, the candidate must:

- identify current procedures, practices and compliance requirements in relation to environmental and resource sustainability in the workplace
- engage and consult with relevant stakeholders to develop and implement sustainability improvements, encourage feedback and to report on outcomes
- plan and organise work group activities to:
 - measure current resource usage
 - evaluate alternative solutions to workplace environmental issues
 - resolve workplace sustainability issues and generate ideas for improvements
 - evaluate and implement strategies to improve resource usage
 - comply with environmental requirements
- apply continuous improvement approaches to enhance organisation's sustainability performance
- apply change management techniques to support sustainability performance.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- compliance requirements for the work area with reference to legislation, regulations, codes of practice and workplace procedures that relate to environmental and sustainability issues
- relevant internal and external sources of information for the development of efficiency targets
- benchmarks for environmental and resource sustainability relevant to organisation

- Australian and international standards for corporate social sustainability
- continuous improvement approaches for workplace practices
- resources for monitoring sustainable work practices including:
 - questionnaires and surveys
 - visual calculations
 - supply records and invoices
 - previous internal and external audit documents
- organisational systems and procedures that relate to environmental and resource sustainability improvements, including:
 - supply chain, procurement and costing strategies
 - quality assurance
 - recommendation development and seeking approvals
 - sales strategies and operations.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- environmental sustainability legislation, regulations, standards and codes
- workplace reference materials for environmental sustainability and practices.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBTEC201 Use business software applications

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to select and use software and organise electronic information and data.

The unit applies to those who use a limited range of practical skills with a fundamental knowledge of equipment use and the organisation of data in a defined context, under direct supervision or with limited individual responsibility.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Digital Competence - Technology Use

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Select and prepare to use technology	1.1 Identify task purpose, audience, format and presentation requirements, and clarify with relevant personnel, where required 1.2 Select relevant technology and software applications to achieve requirements of the task 1.3 Adjust workspace, furniture and equipment to suit own ergonomic requirements
2. Input and process information or data	2.1 Identify and open application, according to task and organisational requirements 2.2 Enter information or data into application according to organisational requirements

ELEMENT	PERFORMANCE CRITERIA
	2.3 Ensure information or data is checked and amended according to organisational and task requirements 2.4 Format information or data using appropriate application functions according to organisational and task requirements 2.5 Use relevant help functions to overcome simple issues
3. Finalise and store document	3.1 Review and edit final information or data, and prepare for storage in accordance with organisational and task requirements 3.2 Name and store document and exit application

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Recognises and interprets information from familiar sources to determine job role and task requirements
Writing	<ul style="list-style-type: none"> Produces and amends files to meet task and organisational requirements Completes required documentation using organisational formats

Unit Mapping Information

Supersedes and is equivalent to:

- BSBITU211 Produce digital text documents
- BSBITU212 Create and use spreadsheets
- BSBWOR204 Use business technology.

Supersedes but is not equivalent to BSBCUE301 Use multiple information systems.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBTEC201 Use business software applications

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- select and use at least three business software applications on two occasions each.

In the course of the above, the candidate must:

- select and use technology safely and according to organisational requirements
- identify and address faults according to requirements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key features of:
 - organisation's work health and safety requirements relevant to own role
 - organisation's requirements for file naming and storage
 - applications used for organising electronic information and data.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- workplace equipment and resources
- electronic files, information and data
- workplace documentation.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBWHS513 Lead WHS risk management

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to lead the management of work health and safety (WHS) risks in an organisation. The unit includes facilitating the identification of hazards and potential hazards, leading the assessment of associated risks, selecting and implementing suitable risk controls, and evaluating the overall effectiveness of the organisational WHS risk management process. It involves communicating with stakeholders throughout the process.

The unit applies to those in an organisation who provide specialised knowledge and guidance to a range of personnel when leading the management of WHS risks.

NOTES

1. The terms ‘occupational health and safety’ (OHS) and ‘work health and safety’ (WHS) are equivalent, and generally either can be used in the workplace. In jurisdictions where *model WHS laws* have not been implemented, registered training organisations (RTOs) are advised to contextualise this unit of competency by referring to existing WHS legislative requirements.

2. The *model WHS laws* include the model WHS Act, model WHS Regulations and model WHS Codes of Practice. See Safe Work Australia for further information.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Unit Sector

Regulation, Licensing and Risk – Work Health and Safety

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
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ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Facilitate identification of WHS risk management requirements	1.1 Identify and review internal and external sources of WHS information and data that apply to risk management processes 1.2 Identify legislative requirements for WHS risk management 1.3 Identify duty holders, individuals and/or parties to consult about and participate in risk management processes, according to organisational and legislative requirements 1.4 Identify and communicate roles and responsibilities of individuals and/or parties that impact on risk management 1.5 Identify organisation-specific factors that will impact on hazard identification, risk assessment and risk controls 1.6 Confirm that risk management scope is clearly defined according to organisational policies and procedures
2. Lead risk assessment	2.1 Lead hazard identification process according to organisational policies and procedures 2.2 Identify and document risk factors as they apply to identified hazards according to organisational policies and procedures 2.3 Apply knowledge of WHS laws, workplace WHS information and data, and identified hazards and risk factors to analyse and assess risk 2.4 Document risk assessment according to organisational policies and procedures, and legislative requirements 2.5 Communicate outcomes of risk assessment to required personnel according to organisational and legislative requirements
3. Lead risk control	3.1 Identify organisational risk control policies and procedures appropriate to identified hazards 3.2 Select suitable risk controls according to assessed level of risk, organisational WHS hazard and risk control policies and procedures, and WHS laws 3.3 Plan to implement selected risk controls according to organisation's WHS management system (WHSMS) and WHS information system (WHSIS) 3.4 Implement selected risk controls according to organisational policies and procedures

ELEMENTS	PERFORMANCE CRITERIA
	3.5 Document and communicate selected risk controls to required personnel, according to organisational and legislative requirements
4. Evaluate effectiveness of WHS risk management process	<p>4.1 Establish nature and scope of evaluation process and key performance indicators</p> <p>4.2 Review effectiveness of implemented risk management process according to organisation's WHSMS and legislative requirements</p> <p>4.3 Modify risk management process as required in response to evaluation</p> <p>4.4 Document risk management process according to WHSIS requirements</p> <p>4.5 Communicate evaluation findings according to organisational requirements</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Organises, analyses and integrates information from a range of sources
Writing	<ul style="list-style-type: none"> Documents results of investigations using clear and comprehensible language and layout
Oral Communication	<ul style="list-style-type: none"> Uses listening and questioning techniques to clarify understanding of others' views Presents information with varying level of technical vocabulary to suit audience
Numeracy	<ul style="list-style-type: none"> Collates, interprets and compares mathematical and statistical information relevant to requirements
Navigate	<ul style="list-style-type: none"> Considers legal and regulatory

Skill	Description
the world of work	<p>responsibilities when implementing, monitoring or reviewing risk-management processes</p> <ul style="list-style-type: none"> Leads effective consultation and participation during all stages of WHS risk-management process
Interact with others	<ul style="list-style-type: none"> Identifies and uses appropriate conventions and protocols when communicating with others Plays a lead role in situations requiring effective collaboration skills, demonstrating the ability to guide discussions and outcomes
Get the work done	<ul style="list-style-type: none"> Develops plans or processes to manage WHS risk management tasks, with an awareness of how they contribute to operational and strategic goals Determines whether, and how, others should be involved, using consultative or collaborative processes as an integral part of the decision-making process Applies problem-solving processes to determine solutions to WHS risk management issues Uses analytical and lateral thinking to review practices and suggest improvements Uses a range of digitally-based technology and applications to access, organise and share relevant information in effective ways

Unit Mapping Information

Supersedes and is equivalent to BSBWHS503 Contribute to the systematic management of WHS risk.

Links

Companion Volume Implementation Guides are available from VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBWHS513 Lead WHS risk management

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 5.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, and to:

- plan, implement and evaluate a systematic process for managing work health and safety (WHS) risk in a work area.

During the above, the candidate must:

- identify, interpret and apply information from a range of sources, including organisational and legislative requirements
- review WHS risk-management process according to established scope and key performance indicators
- consult effectively with required stakeholders using appropriate interpersonal communication skills.
-

Knowledge Evidence

The candidate must demonstrate the knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit. This includes knowledge of:

- commonwealth and state/territory WHS laws relating to WHS risk management, including WHS Acts, regulations, codes of practice and standards
- WHS information and data that applies to WHS risk-management process, including:
 - organisational and duty holder legal requirements
 - organisational policies and procedures relating to identifying hazards, assessing risks and implementing risk controls
 - key components of the work health and safety management system (WHSMS)
- internal and external sources of WHS information and data, and procedures for accessing them

- organisational behaviour and culture in relation to WHS risk management activities and their impact on WHS and the work team, including organisation's risk appetite
- key components of effective consultation and participation strategies
- tools and techniques to:
 - identify health and safety hazards
 - assess risks, taking into account nature and impact of risk, and likelihood of risk arising
 - identify and select suitable risk controls
 - facilitate effective communication and consultation processes, and identify key personnel related to communication
- application and limitations of techniques and tools for identifying hazards, and analysing and assessing risks
- hierarchy of control measures:
 - its use in establishing level of risk
 - factors limiting effectiveness of types of controls
 - role and limitations of procedural controls
 - use of personal protective equipment
- other functional areas in the organisation that impact on the management of WHS-related risks
- impact of workforce characteristics and composition on WHS risk and its management, including:
 - cultural background/diversity
 - gender
 - labour market changes
 - levels of language, literacy and numeracy skills in the workforce
 - workforce structure and organisation, including part-time, casual and contract workers, shift rosters and geographical location
 - workers with specific support needs and limitations
 - workplace cultural attitudes towards alcohol and other drug use
- principles of decision-making.
-

Assessment Conditions

Assessment must comply with WHS laws, legal responsibilities and duty of care required for this unit. It must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities undertaken by individuals carrying out WHS duties in the workplace, and must include access to:

- workplace equipment and resources
- WHS laws, and organisational policies and procedures required to demonstrate the performance evidence
- case studies and, where possible, real situations
- opportunities for interaction with others.

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guides are available from VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBWHS516 Contribute to developing, implementing and maintaining an organisation's WHS management system

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to contribute to the development, implementation and maintenance of elements of a work health and safety management system (WHSMS). WHSMSs support organisations in systematically managing work health and safety (WHS) in the workplace. WHSMSs consist of a documented set of plans, actions and procedures that target improvements.

The unit applies to those with organisational responsibilities for contributing to tasks in relation to elements of a WHSMS appropriate to the nature and scale of the organisation and its WHS risks. These people will have supervisory responsibilities, work in a range of WHS roles across all industries, and apply a substantial knowledge base and well-developed skills in a wide variety of WHS contexts.

NOTES

1. The terms 'occupational health and safety' (OHS) and 'work health and safety' (WHS) are equivalent, and generally either can be used in the workplace. In jurisdictions where *model WHS laws* have not been implemented, registered training organisations (RTOs) are advised to contextualise this unit of competency by referring to existing WHS legislative requirements.
2. The *model WHS laws* include the model WHS Act, model WHS Regulations and model WHS Codes of Practice. See Safe Work Australia for further information.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Regulation, Licensing and Risk – Work Health and Safety

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Contribute to developing WHSMS	1.1 Access and analyse sources of information to determine required form, content, purposes and functions of WHSMS 1.2 Identify duty holders and their roles and responsibilities in WHSMS, according to WHS laws 1.3 Document organisational WHSMS that meets legal and organisational requirements 1.4 Consult with individuals and parties about what the WHSMS should include and integrate their feedback as required 1.5 Communicate information about WHSMS to required personnel
2. Contribute to developing WHSMS implementation plan	2.1 Identify key components of plan that meet legal and organisational requirements 2.2 Facilitate and support consultation with, and participation of, required personnel in plan development 2.3 Contribute to developing draft plan according to organisational policies and procedures 2.4 Seek feedback on draft plan 2.5 Finalise and record plan according to organisational policies and procedures
3. Support implementation of WHSMS	3.1 Consult with colleagues on WHSMS implementation and agree on required timeframe and resources 3.2 Communicate benefits of WHSMS and agree on management roles and responsibilities in supporting its implementation 3.3 Identify and address potential barriers to WHSMS implementation according to organisational policies and procedures
4. Contribute to measuring and evaluating WHSMS performance	4.1 Communicate requirements for measuring and evaluating WHSMS performance to required personnel according to organisational requirements 4.2 Facilitate and support consultation with, and participation of, required personnel in measuring and

ELEMENTS	PERFORMANCE CRITERIA
	evaluating WHSMS performance 4.3 Evaluate WHSMS performance outcomes according to established protocols 4.4 Analyse and document outcomes of evaluation process
5. Contribute to review of WHSMS	5.1 Gather and analyse required review documentation according to organisational policies and procedures 5.2 Facilitate and support consultation with, and participation of, required personnel to identify opportunities to improve WHSMS 5.3 Contribute to identifying required changes to WHSMS 5.4 Contribute to adjusting WHSMS as required according to organisational policies and procedures 5.5 Seek approval of updated WHSMS from required personnel 5.6 Distribute information about approved updated WHSMS according to organisational policies and procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Identifies, interprets and critically analyses texts in relation to WHSMS information and WHSMS review documentation
Writing	<ul style="list-style-type: none"> Matches style of writing to purpose and audience in consulting, developing and communicating WHSMS and WHS policy Uses appropriate layout, vocabulary, grammatical structure and conventions in consulting, developing and communicating WHSMS and WHS policy
Oral communication	<ul style="list-style-type: none"> Presents information about WHSMS and WHS policy using structure and language appropriate to the audience Uses questions and active listening to extract main ideas, gather information and feedback, and seek and offer opinions
Numeracy	<ul style="list-style-type: none"> Selects from and applies an expanding range of mathematical and problem-solving strategies in relation to WHSMS measurement and evaluation

Skill	Description
Navigate the world of work	<ul style="list-style-type: none">• Accepts responsibility for developing, implementing or modifying workplace policies and procedures applicable to WHSMS• Keeps up to date on changes to WHS laws and regulations relevant to own role and responsibilities, and considers their implications when negotiating, planning and undertaking work
Interact with others	<ul style="list-style-type: none">• Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction
Get the work done	<ul style="list-style-type: none">• Sequences and schedules activities, monitors implementation and manages relevant communication in relation to WHSMS planning• Uses systematic and analytical processes in non-routine situations, setting goals, gathering relevant information, and identifying and evaluating options against agreed criteria in review and evaluation of WHSMS• Uses digital systems and tools in the context of plan implementation and measurement, and evaluation of WHS performance

Unit Mapping Information

Supersedes and is equivalent to BSBWHS506 Contribute to developing, implementing and maintaining WHS management systems.

Links

Companion Volume Implementation Guides are available from VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBWHS516 Contribute to developing, implementing and maintaining an organisation's WHS management system

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 5.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, and to:

- contribute to developing, implementing, reviewing and improving a work health and safety management system (WHSMS) for an organisation.

During the above, the candidate must:

- communicate and explain the WHSMS and associated implementation plan to others to facilitate their contribution and ensure their commitment to the system
- apply effective consultation and communications processes and protocols
- use suitable and sufficient tools to measure and evaluate WHSMS performance.
-

Knowledge Evidence

The candidate must demonstrate the knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit. This includes knowledge of:

- commonwealth and state/territory WHS laws, guidance material and publications relating to developing and implementing WHSMS
- organisational requirements for WHSMS:
 - commitment from line management and supervisors to provide leadership in WHS and prioritise WHS as part of operational planning and activity
 - compliance with required policies, procedures, processes, and tools
 - requirements for recordkeeping that address WHS, privacy and other relevant legislation
- elements of effective WHSMS with reference to required commonwealth and state/territory WHS Acts, regulations, codes of practice and standards, including:
 - policies and procedures

- WHSMS certification standards
- duty holders and their responsibilities
- consultation and communication arrangements
- required training and induction
- WHS risk assessment, including risk controls
- sources of information to determine required form, content, purposes and functions of WHSMS to be developed and implemented
- key components of WHSMS plan:
 - required resources to implement plan within set timeframes
 - management roles and responsibilities in supporting WHSMS implementation and operation
 - roles and responsibilities of individuals and parties under WHS laws
 - procedures, protocols and tools for measuring WHS performance, including WHS-related lead and lag key performance indicators (KPIs)
- barriers to implementing WHSMS, and strategies to address them
- benefits to an organisation of having a WHSMS, and an integrated return-to-work and injury management program
- instruments issued by WHS regulators and how they apply to the organisation
- duties, rights and obligations of individuals and parties under WHS laws.
-

Assessment Conditions

Assessment must comply with WHS laws, legal responsibilities and duty of care required for this unit. It must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities undertaken by individuals carrying out WHS duties in the workplace, and must include access to:

- workplace equipment and resources
- WHS laws, and organisational policies and procedures required to demonstrate the performance evidence
- case studies and, where possible, real situations
- opportunities for interaction with others.

Assessors of this unit must satisfy the assessor requirements in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guides are available from VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

BSBWRT411 Write complex documents

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to plan, draft and finalise complex documents.

The unit applies to individuals who work in a range of business environments and are skilled in the creation of documents that are more complex than basic correspondence, memos and/or forms and that require review and analysis of a range of information sources.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Social Competence – Written Communication

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan complex document	1.1 Determine audience, purpose and requirements of document according to organisation policies and procedures 1.2 Determine required format, style and structure for document 1.3 Establish method of communication 1.4 Develop content overview of document 1.5 Determine categories and logical sequence of information according to proposed structure, content and document requirements
2. Draft complex document	2.1 Confirm information is cohesive and satisfies document purpose and requirements 2.2 Develop draft document to communicate data, information and

ELEMENT	PERFORMANCE CRITERIA
	<p>knowledge according to organisational policies and procedures</p> <p>2.3 Identify gaps in required data, information and knowledge, and collect additional material from relevant sources, if required</p> <p>2.4 Draft text according to document purposes and requirements</p>
3. Finalise complex document	<p>3.1 Review draft text and confirm document purpose and requirements are met</p> <p>3.2 Check grammar, spelling and style for accuracy and punctuation</p> <p>3.3 Confirm draft text is approved by relevant organisation personnel</p> <p>3.4 Review and incorporate any amendments in final copy</p> <p>3.5 Apply basic design elements for document appropriate to audience and purpose</p> <p>3.6 Check document and confirm all requirements are met</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Interprets a variety of text to determine and confirm task requirements Proofreads document checking for grammar, spelling, structure, and suitability of style and format for audience
Oral Communication	<ul style="list-style-type: none"> Uses listening and questioning skills to seek additional information or confirmation of task completion
Self-management	<ul style="list-style-type: none"> Follows accepted communication practices and protocols when seeking information or feedback from others Takes responsibility for planning, sequencing and prioritising tasks to achieve required outcomes
Technology	<ul style="list-style-type: none"> Uses the main features and functions of digital tools to complete work tasks

Unit Mapping Information

Supersedes and is equivalent to BSBWRT401 Write complex documents.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

Assessment Requirements for BSBWRT411 Write complex documents

Modification History

Release	Comments
Release 1	This version first released with BSB Business Services Training Package Version 7.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- plan, draft and finalise three different complex documents that convey the required information in a format suitable for the intended audience and purpose according to organisational policies and procedures for document production.

In the course of the above, the candidate must:

- review and analyse a range of information sources
- use business technology to apply formatting and incorporate graphics
- apply organisation style guide/house style.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- organisation style guide/house style
- format and its impact on readability, cohesion and appearance of document
- categories and logical sequences of information
- rules and conventions for written English
- key features of word processing software
- key features of written communication methods, including:
 - general emails
 - procedures
 - business letters
 - meeting agendas
- organisational policies and procedures relating to written communication
- process for checking:
 - suitability of document for audience, purpose, format, and structure

- grammar, spelling and style for accuracy and punctuation
- key text elements including basic design elements.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- office equipment and resources
- organisational policies and procedures
- organisational style guides.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=11ef6853-ceed-4ba7-9d87-4da407e23c10>

CHCDIV001 Work with diverse people

Modification History

Release	Comments
Release 1	<p>This version was released in <i>CHC Community Services Training Package release 2.0</i> and meets the requirements of the 2012 Standards for Training Packages.</p> <p>Merged HLTHIR403C/CHCCS405C. Significant changes to the elements and performance criteria. New evidence requirements for assessment, including volume and frequency.</p>

Application

This unit describes the skills and knowledge required to work respectfully with people from diverse social and cultural groups and situations, including Aboriginal and/or Torres Strait Islander people.

This unit applies to all workers.

The skills in this unit must be applied in accordance with Commonwealth and State/Territory legislation, Australian/New Zealand standards and industry codes of practice.

Elements and Performance Criteria

ELEMENT

Elements define the essential outcomes

1. Reflect on own perspectives

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element

1.1 Identify and reflect on own social and cultural perspectives and biases

1.2 Work with awareness of own limitations in self and social awareness

1.3 Use reflection to support own ability to work inclusively and with understanding of others

ELEMENT**PERFORMANCE CRITERIA**

Elements define the essential outcomes

Performance criteria describe the performance needed to demonstrate achievement of the element

- 1.4 Identify and act on ways to improve own self and social awareness

2. Appreciate diversity and inclusiveness, and their benefits
 - 2.1 Value and respect diversity and inclusiveness across all areas of work
 - 2.2 Contribute to the development of work place and professional relationships based on appreciation of diversity and inclusiveness
 - 2.3 Use work practices that make environments safe for all

3. Communicate with people from diverse backgrounds and situations
 - 3.1 Show respect for diversity in communication with all people
 - 3.2 Use verbal and non-verbal communication constructively to establish, develop and maintain effective relationships, mutual trust and confidence
 - 3.3 Where a language barrier exists, use effective strategies to communicate in the most efficient way possible
 - 3.4 Seek assistance from interpreters or other persons according to communication needs

4. Promote understanding across diverse groups
 - 4.1 Identify issues that may cause communication misunderstandings or other difficulties
 - 4.2 Where difficulties or misunderstandings occur, consider the impact of social and cultural diversity
 - 4.3 Make an effort to sensitively resolve differences, taking account of diversity considerations
 - 4.4 Address any difficulties with appropriate people and seek assistance when required

Foundation Skills

The Foundation Skills describe those required skills (language, literacy, numeracy and employment skills) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5e0c25cc-3d9d-4b43-80d3-bd22cc4f1e53>

Assessment Requirements for CHCDIV001 Work with diverse people

Modification History

Release	Comments
Release 1	<p>This version was released in <i>CHC Community Services Training Package release 2.0</i> and meets the requirements of the 2012 Standards for Training Packages.</p> <p>Merged HLTHIR403C/CHCCS405C. Significant changes to the elements and performance criteria. New evidence requirements for assessment, including volume and frequency.</p>

Performance Evidence

The candidate must show evidence of the ability to complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the job role. There must be evidence that the candidate has:

- undertaken a structured process to reflect on own perspectives on diversity
- recognised and respected the needs of people from diverse social and cultural backgrounds in at least 3 different situations:
 - selected and used appropriate verbal and non verbal communication
 - recognised situations where misunderstandings may arise from diversity and formed appropriate responses

Knowledge Evidence

The candidate must be able to demonstrate essential knowledge required to effectively complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the work role. This includes knowledge of:

- concepts of cultural awareness, cultural safety and cultural competence and how these impact different work roles
- concepts and definitions of diversity
- own culture and the community attitudes, language, policies and structures of that culture and how they impact on different people and groups
- features of diversity in Australia and how this impacts different areas of work and life:
 - political
 - social
 - economic

- cultural
- legal and ethical considerations (international, national, state/territory, local) for working with diversity, how these impact individual workers, and the consequences of breaches:
 - discrimination:
 - age
 - disability
 - racial
 - sex
 - human rights:
 - *Universal declaration of human rights*
 - relationship between human needs and human rights
 - frameworks, approaches and instruments used in the workplace
 - rights and responsibilities of workers, employers and clients, including appropriate action when rights are being infringed or responsibilities not being carried out
- key areas of diversity and their characteristics, including:
 - culture, race, ethnicity
 - disability
 - religious or spiritual beliefs
 - gender, including transgender
 - intersex
 - generational
 - sexual orientation/sexual identity - lesbian, gay, bisexual, heterosexual
- key aspects, and the diversity, of Australia's Aboriginal and/or Torres Strait Islander cultures, including:
 - social, political and economic issues affecting Aboriginal and/or Torres Strait Islander people
 - own culture, western systems and structures and how these impact on Aboriginal and/or Torres Strait Islander people and their engagement with services
- potential needs of marginalised groups, including:
 - protective factors
 - physical, mental and emotional health issues/care needs
 - consideration of impacts of discrimination, trauma, exclusion and negative attitudes
- resources that support individuals and organisations to embrace and respond to diversity
 - language and cultural interpreters
 - imagery
- influences and changing practices in Australia and their impact on the diverse communities that make up Australian society
- impact of diversity practices and experiences on personal behaviour, interpersonal relationships, perception and social expectations of others

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions. Where simulation is used, it must reflect real working conditions by modelling industry operating conditions and contingencies, as well as, using suitable facilities, equipment and resources.

Assessors must satisfy the Standards for Registered Training Organisations (RTOs) 2015/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5e0c25cc-3d9d-4b43-80d3-bd22cc4f1e53>

CPPACC6002A Apply performance-based codes and risk management principles to assessing buildings for access

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit specifies the competency required to apply performance-based codes, and risk assessment and risk management principles to accessibility features of buildings. It covers the comparison of proposed alternative solutions to the prescriptive Deemed-to Satisfy (DTS) requirements of the building legislation for the accessibility of building developments. It includes the evaluation of existing common law decisions for assessing risks associated with building development.

The assessment results in the preparation of a report describing the suitability of the proposed Alternative Building Solution to the provision of access and its usability by people with disabilities.

The unit requires the ability to communicate with members of the building industry on the interpretation and implementation of the Disability Discrimination Act (DDA), the DDA Premises Standard and the Building Code of Australia (BCA).

The access consultant may either work alone or as a member of a team.

This unit is based on BCGSV6009A Implement performance based codes and risk management principles for buildings up to 3 storeys.

Application of the Unit

Application of the unit

This unit of competency supports the access consulting service of serving on a BCA Access Panel. It involves the application of analysis, planning and evaluation to complex technical issues.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Not Applicable

Employability Skills Information

Employability skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

1 Evaluate performance-based codes.

2 Apply the performance-based codes.

PERFORMANCE CRITERIA

1.1 The role of the regulation of buildings and the built environment within society is identified and applied.

1.2 Societal goals related to the construction and use of buildings are interpreted.

1.3 The hierarchy of commonwealth, state and territory ***building access legislation*** and the role of BCA Objectives, Functional Statements and Performance Requirements are identified and recorded.

1.4 Differences between public policy and professional judgement are identified and recorded.

2.1 Assessment methods pertaining to access contained in the BCA and their application are identified and applied.

2.2 Methodologies for determining correct performance requirements to be satisfied are applied.

2.3 Processes for involving relevant parties in the decision-making process are determined.

2.4 Impacts of a performance-based solution on building maintenance and alterations are identified and documented.

2.5 Assessment report for the proposed performance-based solution is prepared.

ELEMENT

PERFORMANCE CRITERIA

- 2.6 All documentation and records used in evaluating the proposed performance-based solution are retained for future reference and retrieval.
- 3 Conduct a risk assessment.**
- 3.1 Assessment methods pertaining to access contained in the BCA and their application are identified and applied.
- 3.2 Methodology for determining correct performance requirements to be satisfied is applied.
- 3.3 Methodology for determining and assessing risks is identified and applied.
- 3.4 Research data sources for risk assessment and management are identified and applied.
- 3.5 Consequences of various forms of risk are identified and reported.
- 3.6 Basic probabilistic analysis, including use of event trees, is applied in accordance with risk assessment principles.
- 3.7 Statistics used in risk assessment practices are interpreted.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required knowledge and understanding include:

- anthropometric principles of accessible building design and fitout
- commonwealth, state and territory anti-discrimination legislation and regulations
- commonwealth, state and territory Heritage Acts
- Deemed-to-Satisfy provisions
- design, structural and construction principles of buildings
- disability awareness
- environmental issues impacting on material selection
- ergonomic principles
- industry codes of practice and ethics
- international standards on building access
- limitations of work role, responsibility and professional abilities
- nature of building materials and effect of performance

- occupational health and safety (OHS) policies and procedures
- processes for interpreting reports, working drawings and specifications
- processes for recording data, administering records and preparing reports
- relevant commonwealth, state and territory building and other legislation, local government regulations and Australian standards
- research methodology and analytical processes
- risk management methodology appropriate for buildings and the built environment
- risk management principles
- role, responsibilities and powers of building certifiers
- state and territory Planning and Development Acts
- relevant terminology and definitions in hazard identification.

Required skills and attributes include:

- analytical skills to:
 - analyse, evaluate and apply legislative requirements pertaining to disability access
 - analyse and evaluate the impacts of the full range of disabilities and the limitations that each disability places on the individual's ability to access the environment
 - analyse and evaluate how environmental barriers impact on people with disabilities
 - evaluate the proposed Alternative Building Solution
 - assess risks associated with the proposed Alternative Building Solution
- application skills to:
 - apply relevant anti-discrimination and building legislation
 - apply industry building codes of practice and ethics and other legislative requirements to work processes
 - apply disability awareness to work processes
 - apply current Australian and international building codes, standards, regulations and practices
- communication skills to:
 - explain clearly information on issues and legislation relating to the provision of access
 - consult effectively with clients and colleagues
 - impart knowledge and ideas through oral, written and visual means
 - use workplace equipment and communication methods
- literacy skills to:
 - assess and use workplace information
 - read and interpret plans, specifications and structural drawings
 - read and use anatomical and medical terminology
 - read and use building and construction terminology
- organisational skills to:
 - prepare and manage documentation
 - collect, store and retrieve data
- interpersonal skills to:

- relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities
- seek and obtain information in a sensitive and appropriate manner
- facilitate change for greater awareness of disability access
- analyse own work practices and process outcomes critically
- engage colleagues and share disability access knowledge
- adapt to new workplace situations
- research skills to:
 - initiate searches for information relevant to assessing Alternative Building Solutions
 - source, analyse and evaluate building legislative requirements
 - source, analyse and evaluate legislative requirements for the provision of access.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for this Training Package.

Overview of assessment

- This unit of competency could be assessed on its own or as part of an integrated assessment activity involving other competencies relevant to the job function.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- A person who demonstrates competency in this unit must be able to provide evidence of:
 - recognising the needs and desires of people with disabilities to engage fully in all aspects of society, and their right to do so
 - interpreting accurately the impacts of the full range of disabilities and the limitations that each disability places on the individual's ability to access the environment
 - interpreting accurately how the full range of environmental barriers impact on any of the impairments that people with disabilities might have
 - applying disability awareness to the provision of access for people with disabilities
 - interpreting and applying the BCA hierarchy and the Objectives, Functional Statements and Performance Requirements when evaluating

performance-based designs

- selecting and applying suitable assessment methods for determining correct performance requirements
- selecting and applying suitable risk assessment methods in evaluating performance-based designs
- researching and referring to recognised national and international data sources and publications on access issues
- interpreting the financial and social costs and benefits of Building Upgrade Plans and maintenance activities to provide access
- complying with OHS regulations applicable to workplace operations
- reporting the determination of compliance within the context of relevant legislation, BCA and Australian standards
- applying organisational management policies and procedures, including quality assurance requirements.

Context of and specific resources for assessment

- Resource implications for assessment include:
 - a registered provider of assessment services
 - competency standards
 - assessment materials and tools
 - suitable assessment venue/equipment
 - workplace documentation
 - candidate special requirements
 - cost and time considerations.
- Validity and sufficiency of evidence requires that:
 - competency will need to be demonstrated over a period of time reflecting the scope of the role
 - where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice with a decision of competence only taken at the point when the assessor has complete confidence in the person's competence
 - all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
 - where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be current and show that it represents competency

demonstrated over a period of time

- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Building access legislation may include:

- Australian standards
- DDA
- DDA Premises Standard
- DDA Transport Standard
- BCA
- state and territory building legislation
- commonwealth, state and territory anti-discrimination legislation and regulations

local government regulations.

Unit Sector(s)

Unit sector

Access consulting

CPPACC6003A Apply unjustifiable hardship principles to Alternative Building Solutions for access

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit specifies the competency required to apply the principles of unjustifiable hardship to the legislative requirements for existing buildings undergoing building work. It requires an assessment of any unjustifiable hardship component of a proposed Building Upgrade Plan, Alternative Building Solution or application for an exception from a requirement of the Building Code of Australia (BCA).

The assessment is tested against the principles of unjustifiable hardship as set out in the Process to Administer Access to Buildings (The Protocol) and the Disability Discrimination Act (DDA) Premises Standard. The assessment may result in the preparation of a report describing the processes for reaching approval of the proposed alternative solution or application for exception.

The unit requires the ability to communicate with members of the state or territory Access Panel on the interpretation and implementation of the DDA, the DDA Premises Standard, the BCA and The Protocol.

The access consultant may either work alone or as a member of a team.

Application of the Unit

Application of the unit

This unit of competency supports the access consulting service of serving on a BCA Access Panel. It involves the application of analysis, planning and evaluation to complex technical issues.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Not Applicable

Employability Skills Information

Employability skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

- | | |
|---|--|
| <p>1 Assess the proposal from the building control authority.</p> | <p>1.1 The nature of the proposal documentation is classified as a <i>Building Upgrade Plan</i>, an <i>Alternative Building Solution</i> or an <i>application for exception from a requirement of the BCA</i>.</p> <p>1.2 Access issues raised by the building control authority are identified, clarified and documented.</p> <p>1.3 The grounds for a request for unjustifiable hardship are identified from within the proposal documentation.</p> |
| <p>2 Apply unjustifiable hardship principles to the assessment of the Building Upgrade Plan.</p> | <p>2.1 Key access components of the Building Upgrade Plan are identified.</p> <p>2.2 A technical assessment of the issues identified in the Building Upgrade Plan is conducted in accordance with the Process to Administer Access to Buildings.</p> <p>2.3 The level of access resulting from the Building Upgrade Plan is determined in accordance with <i>legislative requirements</i>.</p> <p>2.4 The appropriateness of the timeframes proposed by the Building Upgrade Plan is assessed and the findings are documented in accordance with <i>unjustifiable hardship considerations</i>.</p> |
| <p>3 Apply unjustifiable hardship principles to</p> | <p>3.1 The performance of the Alternative Building Solution for providing access outcomes equivalent</p> |

ELEMENT

the assessment of the Alternative Building Solution.

4 Apply unjustifiable hardship principles to the assessment of the application for exception from a requirement of the BCA.

PERFORMANCE CRITERIA

to the Deemed-to-Satisfy provisions of the relevant legislative requirements is assessed.

3.2 A technical assessment of the issues identified in the application for Alternative Building Solution is conducted in accordance with the Process to Administer Access to Buildings.

3.3 The ability of the Alternative Building Solution to provide access is assessed in accordance with unjustifiable hardship considerations.

3.4 Unjustifiable hardship considerations are assessed and the findings are documented in accordance with the objectives of the DDA and state and territory anti-discrimination legislation.

4.1 The issues nominated in the proposal as preventing the provision of access are identified.

4.2 A technical assessment of the issues identified in the application for exception is conducted in accordance with the Process to Administer Access to Buildings.

4.3 The validity of the issues presented in the application for exception from a requirement of the BCA is assessed against unjustifiable hardship considerations.

4.4 Unjustifiable hardship decisions are assessed and the findings are documented in accordance with the objectives of the DDA and state and territory anti-discrimination legislation.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required knowledge and understanding include:

- anthropometric principles of accessible building design and fitout
- commonwealth, state and territory anti-discrimination legislation and regulations
- commonwealth, state and territory Heritage Acts
- design, structural and construction principles of buildings
- disability awareness
- environmental issues impacting on material selection
- ergonomic principles

- functional systems of the human body
- industry codes of practice and ethics
- international standards on building access
- limitations of work role, responsibility and professional abilities
- nature of building materials and effect of performance
- occupational health and safety (OHS) policies and procedures
- processes for interpreting reports, working drawings and specifications
- processes for recording data, administering records and preparing reports
- relevant commonwealth, state and territory building legislation, local government regulations and Australian standards
- research methodology and analytical processes
- role, responsibilities and powers of building certifiers
- state and territory Planning and Development Acts
- relevant terminology and definitions in hazard identification.

Required skills and attributes include:

- analytical skills to:
 - analyse, evaluate and apply legislative requirements pertaining to disability access
 - analyse and evaluate the impacts of the full range of disabilities and the limitations that each disability places on the individual's ability to access the environment
 - analyse and evaluate how environmental barriers impact on people with disabilities
 - apply unjustifiable hardship principles to arguments presented in applications for an exception to a requirement of the BCA
 - interpret and analyse routine and non-routine situations to establish suitable methods of reporting
- application skills to:
 - apply relevant anti-discrimination and building legislation
 - apply industry building codes of practice and ethics and other legislative requirements to work processes
 - apply disability awareness to work processes
 - apply current Australian and international building codes, standards, regulations and practices
- communication skills to:
 - discuss unjustifiable hardship principles, their interpretation and application
 - seek alternative advice from other experts within own field
 - seek advice from experts in areas outside own expertise
- literacy skills to:
 - assess and use workplace information
 - read and interpret plans, specifications and structural drawings
 - read and use anatomical and medical terminology
 - read and use building and construction terminology

- read and comprehend case documentation associated with claims for unjustifiable hardship
- organisational skills to:
 - confirm that all relevant case documentation is provided
 - research, reference, store and retrieve data for use in decision-making processes
- interpersonal skills to:
 - relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities
 - seek and obtain information in a sensitive and appropriate manner
 - facilitate change for greater awareness of disability access
 - analyse own work practices and process outcomes critically
 - engage colleagues and share disability access knowledge
 - adapt to new workplace situations
- personal attributes relating to:
 - impartiality
 - fairness
 - independence
 - objectivity
 - confidentiality
 - respect
- research skills to:
 - initiate searches for information relevant to claims for unjustifiable hardship
 - source, analyse and evaluate building legislative requirements
 - source, analyse and evaluate legislative requirements for the provision of access
- technical skills to:
 - participate in decision-making processes.
 -

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for this Training Package.

Overview of assessment

- This unit of competency could be assessed on its own or as part of an integrated assessment activity involving other competencies relevant to the job function.

Critical aspects for assessment and evidence required to demonstrate

- A person who demonstrates competency in this unit must be able to provide evidence of:
 - recognising the needs and desires of people with

competency in this unit

disabilities to engage fully in all aspects of society, and their right to do so

- interpreting accurately the impacts of the full range of disabilities and the limitations that each disability places on the individual's ability to access the environment
- interpreting accurately how the full range of environmental barriers impact on any of the impairments that people with disabilities might have
- applying disability awareness to the provision of access for people with disabilities
- interpreting and applying the unjustifiable hardship provisions of the BCA to Building Upgrade Plans, Alternative Building Solutions and applications for exception from a requirement of the BCA
- conducting a technical assessment of Building Upgrade Plans, Alternative Building Solutions and applications for exception in accordance with the Process to Administer Access to Buildings (The Protocol)
- complying with OHS regulations applicable to workplace operations
- reporting assessment findings within the context of the relevant legislation, BCA and Australian standards
- applying organisational management policies and procedures, including quality assurance requirements.

Context of and specific resources for assessment

- Resource implications for assessment include:
 - a registered provider of assessment services
 - competency standards
 - assessment materials and tools
 - suitable assessment venue/equipment
 - workplace documentation
 - candidate special requirements
 - cost and time considerations.
- Validity and sufficiency of evidence requires that:
 - competency will need to be demonstrated over a period of time reflecting the scope of the role
 - where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at

different points in time and separated by further learning and practice with a decision of competence only taken at the point when the assessor has complete confidence in the person's competence

- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be current and show that it represents competency demonstrated over a period of time
- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Building Upgrade Plan means:

- a plan for upgrading the accessibility of an existing building over time.

Alternative Building Solution means:

- a building solution that complies with BCA performance requirements, other than by reason of satisfying the Deemed-to-Satisfy provisions.

An ***application for exception from a requirement of the BCA*** refers to:

- a process under the Building Access Regulatory Compliance Process that allows applicants to seek an exception from a requirement of the BCA.

Legislative requirements may include:

- DDA
- commonwealth, state and territory anti-discrimination legislation and regulations
- DDA Premises Standard
- BCA
- Australian standards
- international codes and standards

Unjustifiable hardship considerations may include:

- Process to Administer Access to Buildings (The Protocol).
- the financial viability of a project
- the involvement of public funds in the building work
- the extent of the benefit from providing access
- the significance of any heritage value of features in a building that may be affected by the provision of access
- technical limits
- topographical restrictions or other site constraints
- any relevant safety or health factors
- the requirements of other legislation.

Unit Sector(s)

Unit sector

Access consulting

CPPBDN5101 Produce digital 3-D models of building designs

Modification History

Release 1 This version first released with CPP Property Services Training Package Release 11.0.

Supersedes and is equivalent to CPPBDN5012A Produce and present 3-D models of small-scale building designs. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to produce three-dimensional (3-D) models for small-scale building design projects involving residential projects and commercial or industrial projects up to 2,000m² floor area and buildings of Type B and C construction, as defined in the National Construction Code (NCC).

This unit is suitable for drafters and building designers who apply technical and theoretical knowledge and skills to building design work tasks.

This unit forms part of the licensing requirements for people engaged in building design in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

Nil.

Unit Sector

Building Design

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

- | | | |
|------------------------------------|-----|--|
| 1 Set up and manage digital files. | 1.1 | Create, name, save and retrieve files for digital 3-D models of small-scale building design project. |
| | 1.2 | Import digital drawing files using appropriate file transfer protocols. |

	1.3	Use appropriate file transfer protocols to export and transfer files in required formats for client and consultant use.
2 Create digital 3-D models of building design.	2.1	Access sources of customised architectural objects for digital 3-D models.
	2.2	Operate 3-D modelling functions of design software to create 3-D model and additional objects.
	2.3	Apply architectural objects to 3-D models to meet project requirements.
3 Produce 3-D model presentation.	3.1	Manipulate 3-D models to create a range of views.
	3.2	Apply dimensions and notations to views as required.
	3.3	Check 3-D models for accuracy, completeness, quality and compliance.
	3.4	Select and apply presentation styles and display controls according to project and workplace requirements.
	3.5	Save and file 3-D models according to workplace requirements.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- reading skills to interpret:
 - complex technical information and instructions in software manuals
 - and apply compliance requirements and drawing standards to 3-D models
- numeracy skills to calculate dimensions and scales for models.

Unit Mapping Information

Supersedes and equivalent to CPPBDN5012A Produce and present 3-D models of small-scale building designs.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPBDN5101 Produce digital 3-D models of building designs

Modification History

Release 1 This version first released with CPP Property Services Training Package Release 11.0.

Supersedes and is equivalent to CPPBDN5012A Produce and present 3-D models of small-scale building designs. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by producing digital 3-D models of two different building designs. Designs must include:

- one residential project
- one commercial or industrial project of up to 2,000m² floor area.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant legislation, codes and standards
- workplace and building design project requirements
- client requirements for building design
- architectural styles:
 - terminology
 - objects
 - views
 - notation
- building design data
- contextual and site constraints
- design drawing and representation methods
- functions and operation of 3-D modelling software programs including display controls.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations. Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting where these skills and knowledge would be performed. This includes access to:

- technical references and software manuals
- computer with internet access, 3-D modelling and portable document format software.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

CPPCMN2002 Participate in workplace safety arrangements

Modification History

Release	Comment
Release 1	This version first released with CPP Property Services Training Package Version 5.0.

Application

This unit of competency specifies outcomes required to participate in predetermined workplace safety arrangements in a range of workplace contexts.

The unit applies to personnel who participate in workplace safety arrangements in a cleaning work context. It includes identifying workplace hazards, basic knowledge, and application of workplace emergency procedures.

It applies to individuals who perform their duties alone or in a team environment, under routine supervision and without supervisory responsibilities.

No licensing, legislative or certification requirements apply to this Unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Unit Sector

Cleaning Operations

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements describe the	Performance criteria describe the performance

essential outcomes.		needed to demonstrate achievement of the element.	
1.	Identify and report workplace hazards.	1.1	Assess work area and identify workplace hazards.
		1.2	Assess workplace hazards and work restrictions affecting completion of work order.
		1.3	Communicate and clarify issues with supervisor, team member or client.
		1.4	Refer to Safety Data Sheets (SDS) and follow safe work methods.
		1.5	Position safety signage and barriers to control hazards.
2.	Follow workplace WHS procedures.	2.1	Follow work health and safety (WHS) legislation requirements in accordance with workplace procedures.
		2.2	Participate in WHS workplace practices within scope of own role and responsibilities.
		2.3	Actively follow emergency procedures as required by workplace standards.
		2.4	Complete workplace safety checklist.

Foundation Skills

This section describes language, literacy, numeracy, and employment skills that are essential to the performance in this unit, but not explicit in the performance criteria.

Skill	Performance Feature
Reading skills to:	<ul style="list-style-type: none"> ▶ Interpret workplace safety procedures ▶ Interpret Safety Data Sheets (SDS) ▶ Interpret workplace signs and safety plans
Oral communication skills	<ul style="list-style-type: none"> ▶ Report workplace hazards

to:	▶ Clarify safety issues and procedures
Learning skills to:	▶ Locate information in workplace documents, manuals, and labels
Writing skills to:	▶ Complete workplace reports

Range of Conditions

Not Applicable

Unit Mapping Information

Code and Title Current Version	Code and Title Previous Version	Comment	Equivalence Status
CPPCMN2002 - Participate in workplace safety arrangements	CPPCMN2002A - Participate in workplace safety arrangements	Unit replaces superseded unit CPPCMN2002A - Participate in workplace safety arrangements. Minor changes to performance criteria, and inclusion of foundation skills. Unit updated to meet the Standards for Training Packages.	Equivalent Unit

Links

Companion Volumes to this Training Package are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPCMN2002 Participate in workplace safety arrangements

Modification History

Release	Comment
Release 1	This version first released with CPP Property Services Training Package Version 5.0.

Performance Evidence

A person who demonstrates competency in this unit must participate in two different workplace safety arrangements.

Performance must include:

- communicating effectively with supervisors;
- understanding workplace safety procedures;
- applying basic safety principles in the workplace; and
- assessing and controlling workplace risks.

Knowledge Evidence

A person demonstrating competency in this unit must identify:

- cleaning workplace safety policies and procedures, WHS standards, supervisory instructions relating to safety measures and PPE.
- workplace hazards and risk control measures in cleaning workplaces, including:
 - equipment and material use, storage, cleaning and disposal procedures
 - range and meaning of workplace safety signs and symbols
 - site safety plan
 - types and purpose of personal protective equipment (PPE)
 - ways to maintain WHS in emergency situations
- workplace requirements for undertaking all aspects of workplace safety arrangements tasks including:
 - key workplace safety policies and procedures,
 - work health and safety standards,
 - supervisory instructions relating to safety measures and PPE.

- workplace procedures for;
 - basic assessment of cleaning work areas for workplace hazards
 - basic health and safety including:
 - emergency response and evacuation procedures
 - injury, dangerous occurrence and incident reporting
 - reporting workplace hazards
- communicating and clarifying work requirements with supervisor, team members or client
-

Assessment Conditions

As a minimum, assessors must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Assessment of performance must be undertaken in the workplace and/or under realistic workplace conditions which reflect:

- cleaning workplace safety policies and procedures, WHS standards, supervisory instructions relating to safety measures and PPE.
- performing tasks/activities to the level of proficiency and within timelines that would be expected in a workplace; and
- following standard and authorised work practices, safety requirements and environmental constraints.

Assessors are responsible for ensuring that candidates have access to:

- appropriate documents, materials, tools equipment and personal protective equipment currently used in industry;
- legislation and regulations; and
- workplace policies and procedures.

Links

An Implementation Guide to this Training Package is available at the VETNet website at - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

CPPDSM5022A Implement asset management plan

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to plan for the management of assets. It requires the ability to implement effective strategies to manage the operational, resource and maintenance needs of assets and to review and evaluate those strategies.

The unit may form part of the licensing requirements for persons working in the property industry, including in the real estate, business broking, stock and station agency and property operations and development sectors, in those States and Territories where these are regulated activities.

Application of the Unit

Application of the unit

This unit of competency supports the work of those involved in planning for the management of assets.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

Nil

Employability Skills Information

Employability skills The required outcomes described in this unit of competency contain applicable facets of employability skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged, will assist in identifying employability skills requirements.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Establish performance needs of assets.	1.1 <i>Asset</i> performance needs are established in consultation with <i>relevant people</i> according to <i>organisational requirements</i> .
	1.2 <i>Risk</i> assessment is conducted on asset management outcomes according to organisational and <i>legislative requirements</i> .
	1.3 <i>Industry benchmarks</i> are analysed to determine expected <i>asset performance</i> in varying conditions according to organisational requirements.
	1.4 Applicable legislation is interpreted in order to establish user, contractual and legislative requirements for asset performance.
	1.5 Specifications, conditions and manufacturer requirements for asset maintenance and operation are identified for incorporation into plan.
2 Prepare asset management plan.	2.1 Asset management plan is prepared that facilitates achievement of identified aims and objectives.
	2.2 Operational and maintenance <i>schedule</i> detailing a range of activities and time lines is incorporated into asset management plan.
	2.3 Asset management plan is presented to <i>client</i> for review according to organisational requirements.

ELEMENT	PERFORMANCE CRITERIA
	<p>2.4 Quality assurance goals and strategies related to implementation of the plan are communicated using established <i>communication channels</i>.</p> <p>2.5 Monitoring and reporting arrangements for asset management plan are established and documented in line with client requirements.</p> <p>2.6 Financial, physical and human resource requirements are identified and arranged according to asset management plan and organisational requirements.</p> <p>2.7 Roles and responsibilities for establishing and maintaining <i>asset register</i> are identified and documented according to client and legislative requirements.</p>
3 Review and evaluate asset management plan.	<p>3.1 <i>Maintenance strategies</i> and plans are reviewed and evaluated in consultation with client and relevant people using appropriate <i>communication techniques</i>.</p> <p>3.2 Systematic review processes and established <i>evaluation methods</i> are identified and used to assess planning processes and outcomes.</p> <p>3.3 Evaluation results are prepared in required format, style and structure and presented to relevant people within agreed timeframes.</p> <p>3.4 Recommendations for improvement of plan are presented to relevant people according to organisational procedures.</p> <p>3.5 <i>Business equipment and technology</i> are used to securely maintain documentation according to legislative and organisational procedures.</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- analytical skills to interpret documentation, analyse risk, estimate costings and budget needs, and review and evaluate plan
- communication skills to negotiate and consult with relevant people
- computing skills to access the internet and web pages, prepare and complete online forms, lodge electronic documents and search online databases

REQUIRED SKILLS AND KNOWLEDGE

- interpersonal skills to relate to people from a range of social, cultural and ethnic backgrounds and varying physical and mental abilities
- literacy skills to interpret written and oral information
- organisational skills to schedule and meet time lines and client requirements, organise resource and support processes, and plan and document strategies to manage assets
- technical skills to develop schedules and document plans.

Required knowledge and understanding:

- building codes and relevant Australian standards
- building control legislation
- building practices in relevant property types
- building services and operation methods and practices
- customer needs and preferences for different property types
- industry performance benchmarks
- limitations of work role, responsibility and professional abilities
- maintenance procedures, including vendor specifications
- monitoring and evaluation systems
- OHS issues and requirements
- organisational and professional procedures, ethical practices and business standards
- relevant federal and state or territory legislation and local government regulations related to:
 - anti-discrimination
 - consumer protection
 - environmental issues
 - equal employment opportunity (EEO)
 - financial probity
 - franchise and business structures
 - industrial relations
 - OHS
 - privacy
 - property sales, leasing and management
- standards for building equipment operation.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for this Training Package.

Overview of assessment

This unit of competency could be assessed through practical demonstration of planning for the management of assets. Targeted written (including alternative formats where necessary) or verbal questioning to assess the candidate's underpinning knowledge would provide additional supporting evidence of competence. The demonstration and questioning would include collecting evidence of the candidate's knowledge and application of ethical standards and relevant federal, and state or territory legislation and regulations. This assessment may be carried out in a simulated or workplace environment.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of:

- determining asset performance needs using industry benchmarks and consideration of risk
- documenting resource and support arrangements, incorporating expected costs, and processes for development and maintenance of an asset register and operational and maintenance schedules
- evaluating the asset management plan through consultation with interested parties
- knowledge of organisation's practices, ethical standards and legislative requirements associated with planning for the management of assets
- preparing a detailed asset management plan which incorporates strategies for risk management, resource needs, monitoring and reporting arrangements and quality assurance.

Context of and specific resources for assessment

Resource implications for assessment include:

- a registered provider of assessment services
- assessment materials and tools
- candidate special requirements
- competency standards
- cost and time considerations
- suitable assessment venue and equipment.

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and/or assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence require that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice with a decision of competence only taken at the point when the assessor has complete confidence in the person's competence
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be current and show that it represents competency demonstrated over a period of time
- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit.

In all cases activity and must include evidence relating to each of the where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in such a manner as is appropriate to the language and literacy levels of the candidate and any cultural issues that may affect responses to the questions, and will reflect the requirements of the competency and the work being performed.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Assets may be static or dynamic and include:

- buildings
- business and marketing contracts
- equipment
- furniture
- goodwill
- land
- property
- vehicles.

Relevant people may include:

- agents
- clients
- designated OHS representatives
- emergency personnel
- engineers and technicians
- government personnel
- installers
- legal representatives
- management and colleagues
- members of industry associations
- property owners
- site personnel
- subcontractors
- technical experts
- tenants.

Organisational requirements may be outlined and reflected in:

- access and equity principles and practice guidelines
- business and performance plans
- complaint and dispute resolution procedures
- goals, objectives, plans, systems and processes
- legal and ethical requirements and codes of practice
- mission statements and strategic plans
- OHS policies, procedures and programs
- policies and procedures in relation to client service
- quality and continuous improvement processes and standards
- quality assurance and procedure manuals.

Risk may relate to:

- industry special risks
- loss of profits
- machinery malfunction

Legislative requirements may be outlined and reflected in:

- OHS
- public liability
- trade practices issues.
- Australian standards, and quality assurance and certification requirements
- award and enterprise agreements
- codes of practice covering the market sector and industry, financial transactions, taxation, environment, construction, land use, native title, zoning, utilities use (water, gas and electricity), and contract or common law
- environmental and zoning laws affecting access security, access and property use
- general duty of care to clients
- home building requirements
- local regulations and by-laws
- privacy laws applying to owners, contractors and tenants
- relevant federal, and state or territory legislation that affects organisational operation, including:
 - anti-discrimination and diversity
 - environmental issues
 - EEO
 - industrial relations
 - OHS
- strata, community and company titles
- tenancy agreements
- trade practices laws and guidelines.

Industry benchmarks may include:

- discounted cash flow
- employment rates
- industry association performance index
- inflation rate
- internal rate of return
- life cycle costing
- published vacancy factors
- tenancy mix.

Asset performance criteria may include:

- age
- condition assessment
- cost
- depreciation
- down time
- emergency operation and backup
- functionality

- life span
 - maintenance requirements and cost
 - replacement
 - security
 - service levels.
- Schedules*** may be:
- charts
 - computerised
 - paper-based
 - prepared for daily, weekly, monthly or annual timeframes
 - to-do lists
 - wall-mounted planning boards
 - work diary.
- Clients*** may include:
- building supervisors
 - company management
 - fund managers
 - fund providers
 - government and legal instruments or agencies
 - institutions
 - insurers
 - internal and external property groups
 - legal advisers
 - private investors
 - property agents
 - property owners
 - risk assessors.
- Communication channels*** may include:
- direct line supervision paths
 - lateral supervision paths
 - organisational communication protocols and procedures
 - organisational networks.
- Asset register*** may include:
- air conditioning
 - cleaning
 - heating
 - security systems
 - telecommunications systems
 - utilities
 - ventilation
 - vertical services
 - waste management.
- Maintenance strategies*** may relate to:
- cleaning
 - electrical

- emergency lighting
- evacuation
- fire lighting
- garden
- housekeeping
- painting
- pests
- plumbing
- sanitary disposal
- security
- vertical movement
- waste disposal
- weather proofing.
- active listening
- clear presentation of options
- consultation methods
- culturally inclusive and sensitive engagement techniques
- questioning to clarify and confirm understanding
- seeking feedback
- two-way interaction
- using language and concepts appropriate to cultural differences
- verbal or non-verbal language.
- checklists
- cost data analysis
- expert and peer review
- interviews
- observation
- questionnaires
- review of quality assurance data.
- data storage devices
- email
- facsimile machines
- internet, extranet and intranet
- photocopiers
- printers
- scanners
- software applications, such as databases and word applications
- work computers.

Communication techniques may include:

Evaluation methods could be qualitative or quantitative and may include:

Business equipment and technology may include:

Unit Sector(s)

Unit sector Property development, sales and management

Competency field

Competency field Property operations and development

CPPDSM6002A Conduct a property investment feasibility study

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to conduct an assessment of investment feasibility. It requires the ability to identify objectives and techniques to undertake the study, use valid and reliable research techniques to analyse information, and report study findings and conclusions.

The unit may form part of the licensing requirements for persons engaged in property operations and development in those States and Territories where these activities are regulated.

Application of the Unit

Application of the unit

This unit of competency supports the work of those involved in conducting assessments of investment feasibility.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

Nil

Employability Skills Information

Employability skills The required outcomes described in this unit of competency contain applicable facets of employability skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged, will assist in identifying employability skills requirements.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Establish study requirements.	<p>1.1 Aims and objectives of <i>investment</i> feasibility study are clearly established according to <i>client</i> and <i>organisational requirements</i>.</p> <p>1.2 Study objectives and time lines are negotiated and agreed in consultation with <i>relevant people</i>.</p> <p>1.3 <i>Relevant documentation</i> and <i>legislative requirements</i> are gathered and reviewed to identify critical requirements of the study.</p> <p>1.4 Initial comparisons with similar properties are made to allow effective comparison with <i>client expectations</i> according to organisational requirements.</p> <p>1.5 Situations requiring <i>specialist advice</i> are identified and support is sought as required according to organisational requirements.</p>
2 Access relevant information.	<p>2.1 Relevant <i>information</i> is gathered and organised in a format suitable for <i>analysis</i> and interpretation.</p> <p>2.2 Market information is accessed and evaluated in terms of validity, reliability and relevance according to identified analysis requirements.</p> <p>2.3 Relevant people are consulted to gather additional information using appropriate <i>communication techniques</i>.</p>

ELEMENT	PERFORMANCE CRITERIA
	2.4 Environment is scanned to identify and assess factors that may impact on study according to organisational requirements.
	2.5 Reliable methods for gathering information are used according to organisational requirements, making efficient use of time and resources.
3 Analyse information.	3.1 Quantitative and qualitative analysis is undertaken of <i>comparative market data</i> using standard financial analysis techniques.
	3.2 Economic trends and market developments are identified and evaluated in terms of potential implications and impact on study objectives.
	3.3 <i>Factors</i> increasing or diminishing investment <i>risk</i> are identified, analysed and discussed with client.
	3.4 Sound reasoning is applied to ensure consistency of interpretations based on available information.
4 Formulate investment scenarios.	4.1 Alternative investment scenarios are developed to meet study requirements according to organisational requirements.
	4.2 <i>Consultative processes</i> are used to obtain views of industry experts as required.
	4.3 Scenarios are verified against prescribed criteria and analysed to minimise subjective assessment.
	4.4 Sensitivity analysis is performed on data to identify degree of convergence within identified industry and market <i>benchmarks</i> .
	4.5 Property trends and <i>market conditions</i> are identified and evaluated against study requirements.
5 Document feasibility study.	5.1 Feasibility study is presented in appropriate format, style and structure using suitable <i>business equipment and technology</i> .
	5.2 Report is prepared and distributed to relevant people within agreed timeframes according to organisational requirements.
	5.3 Conclusions are documented that are verifiable, current and sufficiently detailed to meet identified client and organisational requirements.
	5.4 Information is securely maintained with due regard to client confidentiality, and legislative and organisational requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- communication skills to negotiate client requirements and consult with industry experts and other relevant people
- computing skills to access the internet and web pages, prepare and complete online forms, lodge electronic documents and search online databases
- interpersonal skills to relate to people from a range of social, cultural and ethnic backgrounds and varying physical and mental abilities
- literacy skills to interpret written and oral information
- organisational skills to plan and schedule time lines and objectives and to manage project processes
- problem solving skills to determine factors that may affect property markets and evaluate risk
- research skills to source, analyse and interpret property and market information
- technical skills to use software for planning and scheduling tasks, use financial and assessment software and spreadsheets, and access market information.

Required knowledge and understanding:

- alternative property uses
- building control legislation, codes and relevant Australian standards
- business and industry property networks
- current property and investment market
- investment risk factors and relationship to return expectations
- limitations of work role, responsibility and professional abilities
- OHS issues and requirements
- organisational and professional procedures, ethical practices and business standards
- project assessment methods
- relevant federal and state or territory legislation and local government regulations related to:
 - anti-discrimination
 - consumer protection
 - environmental issues
 - equal employment opportunity (EEO)
 - financial probity
 - franchise and business structures
 - industrial relations
 - OHS

REQUIRED SKILLS AND KNOWLEDGE

- privacy
- property sales, leasing and management
- sources of industry and market information
- types of property markets
- value management.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for this Training Package.

Overview of assessment

This unit of competency could be assessed through practical demonstration of conducting an assessment of investment feasibility. Targeted written (including alternative formats where necessary) or verbal questioning to assess the candidate's underpinning knowledge would provide additional supporting evidence of competence. The demonstration and questioning would include collecting evidence of the candidate's knowledge and application of ethical standards and relevant federal, and state or territory legislation and regulations. This assessment may be carried out in a simulated or workplace environment.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of:

- analysing market information to identify economic trends, market developments and risk factors
- documenting and presenting investment feasibility study using appropriate business equipment and technology
- formulating investment scenarios against industry benchmarks
- knowledge of organisation's practices, ethical standards and legislative requirements associated with conducting an assessment of investment feasibility
- sourcing documentation and information through consultation to establish study aims and objectives,

Context of and specific resources for assessment

- and make initial comparisons of similar properties
- sourcing market and environmental information to identify factors affecting study.

Resource implications for assessment include:

- a registered provider of assessment services
- assessment materials and tools
- candidate special requirements
- competency standards
- cost and time considerations
- suitable assessment venue and equipment
- workplace documentation.

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and/or assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence require that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice with a decision of competence only taken at the point when the assessor has complete confidence in the person's competence
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be current and show that it represents competency demonstrated over a period of time
- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit.

In all cases activity and must include evidence relating to each of the where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be

undertaken in such a manner as is appropriate to the language and literacy levels of the candidate and any cultural issues that may affect responses to the questions, and will reflect the requirements of the competency and the work being performed.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Investment may relate to:

- concepts and plans
- strategies and placement of capital in property for investment
- productive use of property and assets
- customer service outcomes.

Clients may include:

- financial institutions
- fund managers
- individuals
- internal and external property groups
- investment organisations.

Organisational requirements may be outlined and reflected in:

- access and equity principles and practice guidelines
- business and performance plans
- complaint and dispute resolution procedures
- goals, objectives, plans, systems and processes
- legal and ethical requirements and codes of practice
- mission statements and strategic plans
- OHS policies, procedures and programs
- policies and procedures in relation to client service
- quality and continuous improvement processes and standards
- quality assurance and procedure manuals.

Relevant people may include:

- accountants
- agents
- clients

Relevant documentation may relate to:

- government personnel
- interested parties
- legal representatives
- management and colleagues
- members of industry associations
- taxation specialists.
- building codes
- current and planned property or site developments
- deposited, survey and other plans and maps
- depreciation schedules
- land title and zoning
- leasing rates
- legal status
- management policy and procedures
- marketing services
- performance of comparable properties
- permits
- rates notices
- sales information
- taxation papers
- tenancy and other contracts or leases.

Legislative requirements may be outlined and reflected in:

- Australian standards
- general duty of care to clients
- home building requirements
- privacy requirements
- relevant federal, and state or territory legislation that affects organisational operation, including:
 - anti-discrimination and diversity
 - environmental issues
 - EEO
 - industrial relations
 - OHS
- relevant industry codes of practice covering the market sector and industry, financial transactions, taxation, environment, construction, land use, native title, zoning, utilities use (water, gas and electricity), and contract or common law
- strata, community and company titles
- tenancy agreements
- trade practices laws and guidelines.

Client expectations may relate

- immediate capital gains
- long-term capital gains.

to:

Specialist advice may be sought from:

- architects
- bankers and financiers
- developers
- investment consultants
- land economists
- members of industry associations
- planners
- real estate agents
- solicitors
- taxation and accounting practitioners
- valuers.

Information sources may include:

- consultants
- industry and organisational databases
- information services
- press clippings
- published industry data, including industry indices
- third parties
- trade journals.

Analysis may include:

- computer modeling
- examination of cash flows and other financial projections
- examination of collected data
- quantitative and qualitative analysis
- probability analysis
- time series recognition.

Communication techniques may include:

- active listening
- clear presentation of options
- consultation methods
- culturally inclusive and sensitive engagement techniques
- questioning to clarify and confirm understanding
- seeking feedback
- two-way interaction
- using language and concepts appropriate to cultural differences
- verbal or non-verbal language.

Comparative market data may include:

- best practice information
- national and international benchmarking
- inter-organisation comparison data.

Factors that may influence

- constraints on use

complexity of feasibility study may include:

- existing land use and ownership
- government zoning and restrictions
- project financing
- staging of investment or development
- structure of leases
- type and number of tenants.

Risk may relate to:

- asset allocation and investment spread
- borrowing risk
- gearing
- economics
- lifestyle choices
- market and property sector risks, including:
 - fluctuations in economic cycle
 - interest rates
 - stock market
- organisational risk
- risk factors and client return expectations
- volatility of income and capital.

Consultative processes may include:

- face-to-face meetings
- telephone, facsimile and written communication.

Benchmarks may include:

- building operational costs
- business strategy parameters
- economic parameters
- financial constraints
- historical operational costs
- industry published building occupation data
- market expectations
- research data
- statutory costs.

Market conditions may relate to:

- availability of alternatives
- business confidence
- economic conditions
- level of competition.

Business equipment and technology may include:

- computers
- data storage devices
- email
- facsimile machines
- internet, extranet and intranet
- photocopiers
- printers
- scanners

- software applications.

Unit Sector(s)

Unit sector Property development, sales and management

Competency field

Competency field Property operations and development

CPPDSM6008A Develop strategic facilities management plan

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to develop and implement a strategic facilities management plan that is consistent and appropriate. It requires the ability to measure the effectiveness of the facilities management plan using a variety of review and evaluation methods and to modify and implement corrective action strategies.

The unit may form part of the licensing requirements for persons working in the property industry, including in the real estate, business broking, stock and station agency and property operations and development sectors, in those States and Territories where these are regulated activities.

Application of the Unit

Application of the unit

This unit of competency supports the work of those involved in developing and implementing strategic facilities management plans.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

Nil

Employability Skills Information

Employability skills The required outcomes described in this unit of competency contain applicable facets of employability skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged, will assist in identifying employability skills requirements.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Establish facilities management requirements.	<p>1.1 <i>Facilities</i> management performance needs are determined and confirmed as required in consultation with <i>relevant people</i>.</p> <p>1.2 Risk assessment of facilities management outcomes is conducted and assessed according to industry and organisational policies and procedures.</p> <p>1.3 Relevant <i>industry benchmarks</i> are analysed to assess expected performance of <i>assets</i> in varying market conditions.</p> <p>1.4 Applicable industry, <i>organisational and legislative requirements</i> are interpreted to establish user, contractual and legal compliance for facilities performance.</p>
2 Prepare plan.	<p>2.1 <i>Facilities management plan</i> including aims and objectives is prepared in appropriate format for dissemination to relevant people.</p> <p>2.2 <i>Quality assurance goals and strategies</i> are established according to facilities management plan.</p> <p>2.3 Monitoring and reporting arrangements for facilities management plan are determined in line with client requirements.</p> <p>2.4 <i>Life cycle analysis</i> is undertaken and capital investment</p>

ELEMENT	PERFORMANCE CRITERIA
<p>3 Organise resources and support processes.</p>	<p>strategies are planned.</p> <p>3.1 Financial, physical and human resource requirements are organised according to facilities management plan.</p> <p>3.2 <i>Information relating to implementation of facilities management plan</i> is distributed using established <i>communication channels</i>.</p> <p>3.3 Reliable management methods are used, making efficient use of time and resources.</p> <p>3.4 <i>Roles and responsibilities</i> associated with implementation of facilities management plan are clearly defined and documented.</p>
<p>4 Review, evaluate and modify facilities management plan.</p>	<p>4.1 Facilities management plan is reviewed and evaluated in consultation with relevant people using appropriate <i>feedback strategies</i>.</p> <p>4.2 Systematic review processes are established and suitable <i>evaluation methods</i> used to evaluate facilities management plan outcomes.</p> <p>4.3 Evaluation results are reviewed and recommendations for modification of plan and corrective actions are incorporated as required into facilities management plan.</p> <p>4.4 Information is securely maintained with due regard to client confidentiality, and legislative and organisational requirements.</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- analytical skills to interpret documentation, evaluate plan, analyse risk and estimate costings and budget needs
- communication skills to include relevant people in the planning process, discuss issues that may impact on others and receive feedback
- computing skills to access the internet and web pages, prepare and complete online forms, lodge electronic documents and search online databases
- interpersonal skills to obtain feedback that enables a review and evaluation of plan and to relate to people from a range of social, cultural and ethnic backgrounds and

REQUIRED SKILLS AND KNOWLEDGE

varying physical and mental abilities

- leadership skills to take a leading role in a variety of situations and pursue new challenges and opportunities
- literacy skills to access and interpret relevant information and prepare required documentation and information for those involved in implementation activities
- problem solving skills to identify potential barriers to implementation of the plan and establish contingencies
- research skills to collect reliable and valid information and match forecasting models and techniques with specific asset or facility requirements
- technical skills to design facilities or asset management plan, schedule tasks and report outcomes.

Required knowledge and understanding:

- building services and operation methods and practices
- financial analysis and forecasting principles
- impact analysis and investment scenario planning
- industry benchmarks for maintenance procedures
- industry performance benchmarks, including use and application of value analysis and benchmarking techniques
- long-range and annual facility planning techniques and practices
- organisational and professional procedures, ethical practices and business standards
- organisational quality systems, such as recording systems and strategic planning processes
- principles and practices of performance measurement, including review and evaluation procedures, processes and techniques
- principles and processes of objective setting
- relevant federal and state or territory legislation and local government regulations related to:
 - anti-discrimination
 - consumer protection
 - environmental issues
 - equal employment opportunity (EEO)
 - financial probity
 - franchise and business structures
 - industrial relations
 - OHS
 - privacy
 - property sales, leasing and management.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the Assessment Guidelines for this Training Package.

Overview of assessment This unit of competency could be assessed through practical demonstration of developing and implementing a facilities management plan. Targeted written (including alternative formats where necessary) or verbal questioning to assess the candidate's underpinning knowledge would provide additional supporting evidence of competence. The demonstration and questioning would include collecting evidence of the candidate's knowledge and application of ethical standards and relevant federal, and state or territory legislation and regulations. This assessment may be carried out in a simulated or workplace environment.

Critical aspects for assessment and evidence required to demonstrate competency in this unit A person who demonstrates competency in this unit must be able to provide evidence of:

- conducting a life cycle assessment and planning appropriate investment and disposal strategies for incorporation into facilities management plan
- determining facilities and asset management requirements using industry benchmarks and risk assessment strategies
- evaluating the facilities management plan and making recommendations for immediate action or modification of the plan
- identifying resource requirements, communicating roles and responsibilities and designing an implementation strategy for the plan
- knowledge of organisation's practices, ethical standards and legislative requirements associated with developing and implementing facilities management plans
- preparing a facilities management plan incorporating quality systems and reporting procedures.

Context of and specific resources for assessment Resource implications for assessment include:

- a registered provider of assessment services
- assessment materials and tools
- candidate special requirements
- competency standards
- cost and time considerations
- suitable assessment venue and equipment
- workplace documentation.

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and/or assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence require that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice with a decision of competence only taken at the point when the assessor has complete confidence in the person's competence
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be current and show that it represents competency demonstrated over a period of time
- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit.

In all cases activity and must include evidence relating to each of the where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in such a manner as is appropriate to the language and literacy levels of the candidate and any cultural issues that may affect responses to the questions, and will reflect the requirements of the competency and the work being performed.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording in the performance criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Facilities may include:

- car parking
- child care centres
- community facilities
- educational facilities
- meeting places
- offices
- security facilities
- sport and recreation venues.

Relevant people may include:

- agents
- clients
- colleagues
- designated OHS representatives
- emergency personnel
- engineers and technicians
- government personnel
- installers
- legal representatives
- members of industry associations
- property owners
- site personnel
- subcontractors
- supervisors
- technical experts
- tenants
- tradespeople.

Industry benchmarks may relate to:

- discounted cash flows
- employment rates
- industry association performance index
- inflation rate
- internal rates of return
- life cycle costings
- published vacancy factors
- tenancy mix.

Assets may be static or dynamic and include:

- buildings
- business and marketing contracts
- equipment
- furniture

Organisational requirements may be outlined and reflected in:

- goodwill
- land
- property
- vehicles.
- access and equity principles and practice guidelines
- business and performance plans
- complaint and dispute resolution procedures
- emergency and evacuation procedures
- employer and employee rights and responsibilities
- goals, objectives, plans, systems and processes
- legal and ethical requirements and codes of practice
- mission statements and strategic plans
- OHS policies, procedures and programs
- policies and procedures in relation to client service
- policies and procedures relating to own role and responsibility
- quality and continuous improvement processes and standards
- quality assurance and procedure manuals
- records and information systems and processes.

Legislative requirements may be outlined and reflected in:

- Australian standards
- codes of practice covering the market sector and industry, financial transactions, taxation, environment, construction, land use, native title, zoning, utilities use (water, gas and electricity), and contract or common law
- consumer protection
- environmental and zoning laws affecting access security, access and property use
- freedom of information relevant federal, and state or territory legislation that affects organisational operation, including:
 - OHS
 - environmental issues
 - EEO
 - industrial relations
 - anti-discrimination and diversity
- home building requirements
- local regulations and by-laws
- privacy laws applying to owners, contractors and tenants
- public health
- quality assurance and certification requirements
- strata, community and company titles

Facilities management plan may include:

- tenancy agreements
- trade practices laws and guidelines.
- asset management process and practice recommendations
- building and engineering maintenance plans
- environment plans and guidelines
- funding strategies
- life cycle management plans
- long-term capital and maintenance financial forecasts
- performance benchmarking recommendations and measurement processes
- planning guidelines
- quality standards
- risk management processes and practices
- utilities plans and infrastructure such as energy, water and sewerage.

Quality assurance goals and strategies may relate to:

- a formal structure against which progress can be evaluated
- budgets and timetables that enable the commitment of resources at appropriate points in the project
- compliance with Australian standards
- contingency plans to cater for a change of corporate focus or significant project difficulties
- continuous improvement strategies
- mechanisms for involving a wide variety of interested parties or stakeholders in the project
- procedures for monitoring and evaluating project outcomes and client satisfaction
- reducing risk by anticipating, evaluating and developing strategies for the management of possible problems
- reporting procedures and protocols.

Life cycle analysis may include:

- computer modelling
- examination of cash flows and other financial projections
- quantitative and qualitative analysis
- probability analysis
- time series recognition.

Information relating to implementation of facilities management plan may include:

- a formal structure against which progress can be evaluated
- acquisition and disposal strategies
- budgets and timetables that enable the commitment of resources at appropriate points
- consultation strategies to involve stakeholders

- contingency plans to cater for changes or significant difficulties
 - objectives, scope and expected benefits
 - quality assurance procedures
 - specifications
 - transition plans.
- Communication channels*** may include:
- direct line supervision paths
 - lateral supervision paths
 - organisational communication protocols and procedures
 - organisational networks.
- Roles and responsibilities*** may be influenced by:
- codes of conduct
 - job description and employment arrangements
 - organisational policies relevant to work role
 - skills, training and competencies
 - supervision and accountability requirements, including OHS
 - team structures.
- Feedback strategies*** may include:
- clients and their legal representatives
 - management and colleagues
 - documentation and reports
 - formal and informal communication
 - regular meetings.
- Evaluation methods*** could be qualitative or quantitative and may relate to:
- checklists
 - cost data analysis
 - expert and peer review
 - interviews
 - observation
 - questionnaires
 - review of quality assurance data.

Unit Sector(s)

Unit sector Property development, sales and management

Competency field

Competency field

Property operations and development

CPPFES2025A Inspect, test and maintain gaseous fire-suppression systems

Modification History

Revised unit

Unit updated and equivalent to PRMPFES25C Inspect, test and maintain gaseous fire suppression systems

Unit Descriptor

This unit of competency specifies the outcomes required to complete mechanical inspection, testing and maintenance tasks on installed gaseous fire-suppression systems.

Application of the Unit

This unit of competency supports fire protection technicians responsible for inspecting, testing and maintaining gaseous fire-suppression systems. This unit does not apply to any installation, replacement, maintenance and repair functions that are restricted to licensed trades or occupations (subject to relevant state and territory regulations).

Licensing/Regulatory Information

Work in this area must be completed according to relevant legislative, industry, customer and organisational requirements, including policies and procedures relating to occupational health and safety (OHS), and where needed, to ozone depleting substances (ODS) and synthetic greenhouse gases (SGG) emissions.

The unit supports one or more extinguishing agent handling licences prescribed under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989.

Different states and territories may have regulatory mechanisms that apply to this unit. Candidates are advised to check for regulatory limitations.

This unit does not cover all the requirements of AS 1851 Maintenance of fire protection systems and equipment.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Apply rules and regulations to service operations.	1.1	Requirements of relevant <i>rules and regulations</i> are <i>confirmed</i> and applied to <i>work procedures</i> .
		1.2	Knowledge of <i>ODS and SGG materials</i> and legislative and industry requirements is applied when inspecting and testing gaseous fire-suppression systems.
		1.3	Knowledge of operation of fire protection systems is applied to determine system <i>key functional requirements</i> and operation within design limitations.
		1.4	<i>Compliance requirements are checked</i> and <i>action</i> is taken according to <i>organisational policies and procedures</i> .
2	Research layout and components of gaseous fire-suppression system to be inspected.	2.1	Relevant <i>gaseous fire-suppression system information</i> is gathered.
		2.2	Gaseous fire-suppression system application and method of operation are identified.
		2.3	Gaseous fire-suppression system <i>components</i> are identified and located on <i>installation drawings</i> .
		2.4	<i>Isolation devices</i> and interface controls to other systems are identified and located on installation drawings.

- 3 Prepare to inspect, test and maintain gaseous fire-suppression systems.
- 3.1 Necessary **work permits** are obtained prior to entering customer premises.
 - 3.2 Relevant persons and occupants are advised of intended tests and associated procedures.
 - 3.3 System and surrounding work area are assessed for **hazards** and relevant precautions are taken.
 - 3.4 Relevant **tools, equipment and testing devices** are identified and assembled according to work procedures and organisational requirements.
 - 3.5 Alarm signalling equipment (ASE) is switched to test mode in **back-to-base facilities**.
 - 3.6 Equipment is physically isolated to ensure testing or maintenance procedures do not cause discharge of extinguishing agent.
 - 3.7 Equipment and interface controls to other systems are electrically isolated to ensure no alarms or actions are unduly generated.
 - 3.8 Test equipment is installed and calibrated to verify operation of components and system.
- 4 Inspect and test installed gaseous fire-suppression system.
- 4.1 System components are identified and located on site, and exact correspondence of system layout to installation drawings is verified and anomalies reported.
 - 4.2 **Mechanical inspection tasks** specified for **maintenance schedule periods** in relevant **maintenance information** are safely completed.
 - 4.3 **Mechanical test tasks** specified for maintenance schedule periods in relevant maintenance information are safely completed.
 - 4.4 Inspection and testing results are recorded and faulty equipment is reported according to organisational and legislative requirements.
 - 4.5 Relevant **documentation** is completed according to organisational and **customer requirements**.

5	Conduct preventive maintenance on installed gaseous fire-suppression system.	5.1	<i>Mechanical preventive maintenance tasks</i> specified for maintenance schedule periods and described in relevant maintenance information are safely completed.
		5.2	Faulty equipment is repaired or replaced according to organisational, legislative and customer requirements.
		5.3	Transportation and refilling of gaseous agent containers by authorised refilling station are organised.
		5.4	Preventive maintenance activities, including repairs and replacements of faulty equipment, are recorded according to organisational, legislative and customer requirements.
		5.5	Relevant documentation is completed according to organisational and customer requirements.
6	Reinstate installed gaseous fire-suppression system.	6.1	Installed gaseous fire-suppression system is <i>reinstated</i> as fully operational.
		6.2	Customer premises are left in a clean and tidy condition on completion of work.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- customer service skills
- language, literacy and numeracy skills to:
 - communicate with others clearly and concisely, verbally and in writing
 - interpret information on engineering drawings, such as installation drawings
 - read and comply with work instructions and specifications
 - read and record measurements
 - record and report information neatly and legibly
- planning and organising skills to:
 - estimate time to complete activities

- prioritise tasks
- interpersonal skills to relate to people from a range of social and cultural backgrounds
- skills to work safely when:
 - applying workplace housekeeping procedures
 - handling and transporting gaseous containers according to legislation (including ODS and SGG requirements), manufacturer and work procedures
 - using hand and power tools
- technical skills to:
 - conduct:
 - function system tests with other system interfaces as specified in AS 1851
 - routine mechanical maintenance on equipment as specified in AS 1851
 - visual mechanical inspection, testing and maintenance tasks as specified in AS 1851
- identify whether gaseous agent is still suitable for existing occupancy risk
 - operate:
 - actuators to determine that operation is within design parameters for installed equipment
 - manual controls of gaseous fire-suppression system
 - standardised control functions on a fire alarm panel that interfaces with the gaseous system to conduct functional tests as specified in AS 1851
 - remove and replace:
 - container actuators (note: the fire protection technician may require manufacturers' endorsement for specific actuators)
 - containers from container bank manifold
 - verify visually that system complies with original installation requirements

Required knowledge

- difference between total flooding and local application systems
- difference between various types of extinguishing gaseous agents used
- extent to which pressures and liquid levels in extinguishing agent containers vary according to temperature change
- fire suppressant action of gaseous agents in terms of smothering, cooling and reacting chemically with the fire radical
- how building structures, services and service penetration within and through protected area enclosures influence the holding time of a gaseous agent
- industrial relations issues applicable to inspecting, testing and maintaining gaseous fire-suppression systems
- industry best practice methods used to isolate actuators to prevent ODS and SGG emissions in the workplace
- key features of legislation, regulations, codes and standards, including ODS and SGG, applicable to inspecting, testing and maintaining gaseous fire-suppression systems, including:
 - action to take when a breach of OHS, ODS and SGG or other policy occurs

- container handling, moving and transporting requirements
- environment protection authority, ODS and SGG emission requirements
- implications of not applying legislative requirements to job functions
- manufacturers' requirements and standards applicable to inspecting, testing and maintaining gaseous fire-suppression systems
- occupational hazards of gaseous agent in terms of:
 - no observable adverse effect level (NOAEL)
 - lowest observable adverse effect level (LOAEL)
 - products of combustion from fire and products of decomposition associated with some gaseous agents when extinguishing a fire
- operating principles of:
 - lock-off, directional and pressure-release valves
 - pneumatic and mechanical actuators interfaced with gaseous systems
 - fire alarm components interfaced with gaseous fire-suppression systems
 - gaseous agent discharge nozzles
- operation of different types of equipment used to store and release gaseous extinguishant agent
- pressures generated during release of gaseous agents, pressure rating requirements of pipework and fittings, and the need for adequate support bracing
- reasons for preventing ODS and SGG emissions in the workplace
- relevant federal, state or territory legislation that affects organisational operations, including:
 - anti-discrimination and diversity
 - equal employment opportunity
- safety requirements relevant to inspect, test and maintain procedures
- types of:
 - gaseous fire-suppression agents and how they extinguish fire, including concentration and holding time requirements
 - gaseous fire-suppression systems, including:
 - working principles
 - pre-engineered
 - engineered
- use of flooding factors to check extinguishing agent quality

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	This unit of competency could be assessed by observation of at least
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	two different practical demonstrations of inspecting, testing and maintaining gaseous fire-suppression systems at customers' premises.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>A person who demonstrates competency in this unit must be able to provide evidence of the required skills and knowledge specified in this unit.</p> <p>In particular the person should demonstrate the ability to:</p> <ul style="list-style-type: none"> • locate, interpret and apply relevant information, standards and specifications • comply with OHS and ODS and SGG regulations (where required), and state and territory legislation applicable to workplace operations • comply with organisational policies and procedures, including quality requirements • communicate and work effectively and safely with others. <p>Competency must be demonstrated in a minimum of two different settings, including:</p> <ul style="list-style-type: none"> • identifying potential hazards and risks • identifying risk-reduction measures • adhering to safety procedures during inspect, test and maintain procedures • identifying installed gaseous fire-suppression systems • identifying and locating system components • identifying, selecting and using tools, equipment and materials effectively to perform inspect, test and maintain procedures on an installed gaseous fire-suppression system • matching installed system to installation drawings • identifying isolation devices and interface controls to other systems • switching alarm signalling equipment to test mode • physically isolating equipment and gaseous fire-suppression systems • electrically isolating equipment and interface controls to other systems • installing and calibrating test equipment • completing specified mechanical inspection tasks, documenting results and reporting faulty equipment • completing specified mechanical test tasks, documenting results and reporting faulty equipment • completing specified mechanical preventive maintenance tasks, repairing or replacing faulty equipment, and documenting results • reinstating system to operational state • completing workplace housekeeping requirements.

Context of and specific resources for assessment	<p>Assessment of essential underpinning knowledge may be conducted in an off-site context. It is to comply with relevant regulatory or Australian standards' requirements.</p> <p>Resource implications for assessment include:</p> <ul style="list-style-type: none"> • access to customer premises or a simulated workplace environment • assessment documentation • necessary tools, specialist equipment, manuals and relevant documentation, including ODS and SGG policies and work procedures • training and assessment record books.
Method of assessment	<p>Assessment methods must:</p> <ul style="list-style-type: none"> • satisfy the endorsed Assessment Guidelines of the Property Services Training Package • include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application • reinforce the integration of employability skills with workplace tasks and job roles • confirm that competency is verified and able to be transferred to other circumstances and environments.
Guidance information for assessment	<p>Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.</p> <p>Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.</p> <p>This unit could be assessed on its own or in combination with other units relevant to the job function.</p>

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. **Italicised** wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p>Rules and regulations may include:</p>	<ul style="list-style-type: none"> • dangerous goods regulations • environmental regulations • licensing arrangements • OHS legislation, regulations and codes • relevant commonwealth and state or territory building Acts, regulations and codes, such as Building Code of Australia (BCA) • relevant Australian standards, such as: <ul style="list-style-type: none"> • AS 1851 Maintenance of fire protection systems and equipment • note: Australian standards are frequently revised and users must always check for currency and amendments • other relevant legislation relating to fire protection equipment, including: <ul style="list-style-type: none"> • international shipping codes • marine codes for different Australian States.
<p>Requirements may be confirmed with:</p>	<ul style="list-style-type: none"> • colleagues • managers • supervisors • team leaders.
<p>Work procedures may include:</p>	<ul style="list-style-type: none"> • assignment instructions • equipment manufacturers’ requirements • instructions from colleagues, supervisors and managers • personal protective equipment requirements • reporting and documentation requirements • specific customer requirements • work instructions to prevent the emission of ODS and SGG in the workplace.
<p>ODS and SGG extinguishing agents may include:</p> <p>Note list format: product name (other names) use</p> <p>Check the latest amendments to the Ozone Protection and Synthetic Greenhouse Gas Management Act for the</p>	<ul style="list-style-type: none"> • ODS and SGG extinguishing agents commonly used in Australia: <ul style="list-style-type: none"> • FM200 (FE-227 Heptafluoropropane, HFC-227ea) used as a total flooding extinguishing agent and as a replacement for Halon 1301 • Halon 1211 (BCF, Halon 1211 BCF, Bromochlorodifluoromethane) used as a streaming agent – requires a special permit in Australia • Halon 1301 (BTM, Halon 1301 BTM, Bromotrifluoromethane) used as a total flooding agent – requires a special permit in Australia • NAF-P-III (HCFC Blend C) used as a streaming agent • NAF-P-IV (HCFC Blend E) used as a streaming agent • NAF-S-III (HCFC Blend A) used as a total flooding agent

<p>current list of ODS and SGG extinguishing agents.</p>	<ul style="list-style-type: none"> • SF6 (Sulfurhexafluoride) used as an inerting agent in sealed high voltage switchgear • ODS and SGG extinguishing agents not commonly used in Australia: <ul style="list-style-type: none"> • Blitz III (HCFC Blend D) used in flooding systems • CFC-11 (Trichlorofluoromethane) may be found as a propellant in some powder fire extinguishers (this product is banned in Australia but may be found on incoming foreign vessels) • FC-2-1-8 (CEA-308) used in flooding systems • FC-3-1-10 (CEA-410) used in flooding systems • FC-5-1-14 (CEA-614) used as a streaming agent • FE-13 (Trifluoromethane, HFC-23) used as a total flooding agent • FE-241 (Chlorotetrafluoroethane, HCFC-124) used as a total flooding agent for non-occupied spaces and as a streaming agent • FE-25 (Pentafluoroethane, HFC-125) used in inerting and explosion suppression applications • FE-36 (Hexafluoropropane, HFC-236fa) used in portable fire extinguishers – is a replacement for Halon 1211 and Halon 1301 • FM100 (HBFC-22B1) used in portable fire extinguishers • Halon 2402 (Dibromotetrafluoroethane) limited use in military systems – requires a special permit in Australia • Halotron I (HCFC Blend B or HCFC-123) used as a total flooding agent and streaming agent • Halotron II (blend of HFC-143a and HFC-125) used as a total flooding agent and as a replacement for Halon 1301 • HCFC-22 (Chlorodifluoromethane) used as a propellant in some powder fire extinguishers (this product is banned in Australia but may be found on incoming foreign vessels) • HFC-134a (Unsaturated tetrafluoroethane) used as a propellant in some powder fire extinguishers.
<p>Key functional requirements relate to interpreting the system functions within design limitations, such as:</p>	<ul style="list-style-type: none"> • gaseous flooding discharge time and holding time, and factors that can effect these key design requirements, including: <ul style="list-style-type: none"> • nozzle location • openings in protected enclosure • orifices • pipe blockages • system is total flooding or local gaseous system suppression of fire mechanism in relation to fire triangle • understanding of environmental and occupational hazards

	caused by gaseous agents.
Checking system compliance requirements may include:	<ul style="list-style-type: none"> • applying inspection, test and survey requirements according to Australian standards • reviewing documentation to verify that installed systems comply with relevant rules and regulations.
Action may include:	<ul style="list-style-type: none"> • advising customer • documenting non-compliance • making equipment safe • reporting, as required.
Organisational policies and procedures may be located in quality assurance and procedures manuals relating to:	<ul style="list-style-type: none"> • documentation and information systems and processes • legal and organisational policies and guidelines, including personnel practices and guidelines outlining work roles, responsibilities and delegations • legislation relevant to service operations • ODS and SGG policies, procedures and programs • OHS policies, procedures and programs • use of electronic job scheduling and communication devices.
Gaseous fire-suppression systems may include:	<ul style="list-style-type: none"> • synthetic gaseous fire-extinguishing agents (liquefied), such as: <ul style="list-style-type: none"> • ODS and SGG materials • Novec 1230 • inert gaseous fire-extinguishing agents (non-liquefied), such as: <ul style="list-style-type: none"> • Inergen • Argonite • nitrogen • carbon dioxide.
Gaseous fire-suppression system information may include:	<ul style="list-style-type: none"> • as installed drawings • Australian standards • design drawings • manufacturers’ manuals.
Components may include:	<ul style="list-style-type: none"> • actuators: <ul style="list-style-type: none"> • mechanical • pyrotechnic • solenoid • fire alarm system interface components, such as: <ul style="list-style-type: none"> • anti-tamper switches • gaseous system controls and indicators on control and indicating equipment (CIE), such as fire indicating panels (FIP) approved to: <ul style="list-style-type: none"> • AS 1603 Automatic fire detection and alarm systems • AS 4428 Fire detection, warning, control and intercom systems – control and indicating equipment

	<ul style="list-style-type: none"> • positional monitoring switches • pressure switches • remote gas control points • warning system equipment, such as: <ul style="list-style-type: none"> • alarm bells • warning lights and strobes • warning speakers.
<p>Installation drawings may include:</p>	<ul style="list-style-type: none"> • installation drawings that meet the requirements of AS 4214 Gaseous fire extinguishing systems, and fire alarm standards: <ul style="list-style-type: none"> • in AS 1670.1 Fire detection, warning, control and intercom systems – System design, installation and commissioning – Fire • in AS 1670.4 Fire detection, warning, control and intercom systems – System design, installation and commissioning – Sound systems and intercom systems for emergency purposes • including: <ul style="list-style-type: none"> • ‘for construction’ drawings • ‘as installed’ or ‘as built’ drawings.
<p>Isolation devices may include:</p>	<ul style="list-style-type: none"> • CIE, including: <ul style="list-style-type: none"> • FIP • gas control panels • mechanical isolation devices • pneumatic isolation devices.
<p>Work permits may include permits to:</p>	<ul style="list-style-type: none"> • ensure that specific OHS requirements are met before entering a work site • enter a restricted area within a work site • enter a work site • enter a work site at specific times.
<p>Hazards may include:</p>	<ul style="list-style-type: none"> • environmental hazards, such as improper use of ODS and SGG, hazardous materials and other chemicals • environmental risks from ODS and SGG emissions that could be caused by: <ul style="list-style-type: none"> • conducting interface tests between actuators, CIE and fire alarm system during inspect, test and maintain procedures • installing and removing container valve assembly, manifold connection components and actuators • servicing and maintaining container valve assemblies • transporting, storing and manual handling ODS and SGG containers • equipment in a work site

	<ul style="list-style-type: none"> • ergonomic, such as incorrect manual-handling methods • hazards associated with electrical or mechanical faults • obstructive, such as blocked access to emergency entry or exit points • people in a work site • sources of potential harm • situations with a potential to cause loss • work methods, plans and procedures.
<p><i>Tools, equipment and testing devices</i> may include:</p>	<ul style="list-style-type: none"> • fire equipment spare parts, including: <ul style="list-style-type: none"> • aerosol test smoke • anti-tamper seals • clamps • service tags • hand tools, including: <ul style="list-style-type: none"> • hammers • pliers • screwdrivers • spanners • spirit levels • power tools, including: <ul style="list-style-type: none"> • battery powered drills • hammer drills • manual-handling aids, including: <ul style="list-style-type: none"> • hand trucks • lifting straps • trolleys • servicing tools and testing devices, including: <ul style="list-style-type: none"> • actuator simulators • barcode readers • container contents-measurement equipment • electrical multimeter • recharging and pressurising equipment • safety equipment • scales • service tag punch.
<p><i>Back-to-base facilities</i> refer to:</p>	<ul style="list-style-type: none"> • monitoring equipment that is connected by ASE from the CIE to a communication path (telephone line or a radio link) and then to a monitoring centre • monitoring centres, which can be operated by or on behalf of a fire authority for the purposes of mobilising and directing firefighting resources to site where CIE is installed.

<p><i>Mechanical inspection tasks</i> may include:</p>	<ul style="list-style-type: none"> • actions to complete mechanical inspection tasks according to AS 1851, such as: <ul style="list-style-type: none"> • checking enclosure for changes in openings, for example any new, unsealed service penetrations • checking that gas discharge pipe lock-off valve (if fitted) is correctly labelled and accessible • checking that gas containers are secure, accessible and free from damage • inspecting each container pressure indicator to check that pressure is within prescribed limits • where there is no container pressure indicator, checking that system discharged indicator has not operated • checking that release mechanisms, including drop weights, are undamaged, accessible and unimpeded • checking gas container enclosure is accessible, adequately illuminated, ventilated and secured against unauthorised entry • checking integrity of all pneumatic piping and fittings • checking that entire protected area enclosure complies with original design • checking that discharge nozzles are clear and unobstructed, correctly aimed and secured • checking actuating devices for any condition likely to adversely affect their operation, such as excessive deposits of dust or paint coating • inspecting all areas adjacent to protected area to ensure that migration of gas does not create a hazard to personnel • inspecting protected area to check that the risk has not changed from original design, such as computer room to combustible storage and equipment • checking that all pipework, flexible connectors and manifolds are free from damage and adequately secured • checking that discharge from all pressure relief devices and vent valves does not create a hazard to personnel • checking that all directional valves and check valves are correctly orientated • determining whether container valve overhaul is due • determining whether container hydrostatic pressure test is due according to AS 2030 Gas cylinders or AS 1851 Maintenance of fire protection systems and equipment • checking age of pyrotechnic actuator to determine if due for replacement.
<p><i>Maintenance schedule</i></p>	<ul style="list-style-type: none"> • monthly

<p><i>periods</i> may be:</p>	<ul style="list-style-type: none"> • six monthly • yearly • five yearly • ten yearly.
<p><i>Maintenance information</i> may include:</p>	<ul style="list-style-type: none"> • Australian standards • manufacturers’ specifications and recommended procedures • service manual instructions • service manuals and bulletins.
<p><i>Mechanical test tasks</i> may include:</p>	<ul style="list-style-type: none"> • actions to complete mechanical test tasks according to AS 1851, such as: <ul style="list-style-type: none"> • simulating a system operation and confirming that discharge actuators and directional valves operate correctly • testing operation of all mechanical manual discharge release systems • testing operation of mechanical automatic discharge release systems not operated through CIE, such as fusible links • operating system lock-off valve and confirming that the system inoperative visual warning device (VWD) operates • confirming, by weighing, liquid level determination or pressure reading (inert gases only), that each gas container is charged with correct quantity of extinguishing agent • testing to ensure correct operation of all automatic pneumatic controls • simulating operation of agent release detection device and confirming indication of agent release at system control panel.
<p><i>Documentation</i> may include:</p>	<ul style="list-style-type: none"> • application for credit forms • certificates of inspection • corrective action reports • customer recommendation forms • equipment recommendation forms • expense claims • job cards • maintenance record systems • motor vehicle fleet cards • petty cash vouchers • product documentation • service agreements • service test record logbooks.
<p><i>Customer requirements</i> may include:</p>	<ul style="list-style-type: none"> • confirming or varying service instructions • following sign-in and sign-out procedures for entry to or exit from premises

	<ul style="list-style-type: none"> • providing non-routine or urgent services • providing routine services • sighting work permits • written or verbal confirmation of services provided and future maintenance schedule.
<p><i>Mechanical preventive maintenance tasks</i> may include:</p>	<ul style="list-style-type: none"> • actions to complete routine mechanical maintenance tasks according to AS 1851, such as: <ul style="list-style-type: none"> • checking operation of mechanical container actuator and lubricating as necessary • checking operation of remote mechanical release system and lubricating as necessary • checking operation of automatic mechanical release system and lubricating as necessary • replacing pyrotechnic container actuator that will exceed its listed lifetime prior to next scheduled maintenance • cleaning dampers and nozzles that are subject to deposit of contaminants, such as cooking oil, hot wax, etc. • actions to conduct non-routine maintenance, such as general isolation to CIE so that building works can be done, then resetting systems after works are completed.
<p><i>Reinstate</i> process may involve:</p>	<ul style="list-style-type: none"> • confirming all interface actuators are isolated and appropriate signage, documentation and lock-off are in place • removing transport caps on actuator outlets, plugs and locking devices according to manufacturer and organisational requirements • re-installing pneumatic actuators and pilot and slave tubes and fittings according to finalised design documentation and installation drawings • checking pneumatic actuator and pilot and slave tubes connection are free from kinks and physically checking for tightness • re-installing electrical and mechanical actuators according to finalised design documentation and installation drawings • physically checking tightness of electrical and mechanical actuators, and that they are correctly set to operate • re-installing manual actuators according to finalised design documentation and installation drawings • physically checking tightness of manual actuators, and that they are correctly set to operate with safety device engaged • activating all interfaced actuators and removing signage, documentation and lock-off for functional testing • advising relevant persons that system is fully operational and providing appropriate technical, maintenance or handover instructions on operation of system

	<ul style="list-style-type: none">• leaving work site clean and tidy with materials disposed of or recycled according to state or territory legislative and industry requirements.
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Unit Sector(s)

Fire protection equipment

Custom Content Section

Not applicable.

CPPFES2043A Prevent ozone depleting substance and synthetic greenhouse gas emissions

Modification History

Revised unit

Unit updated and equivalent to PRMPFES43A Prevent ozone depleting substance and synthetic greenhouse gas emissions

Unit Descriptor

This unit of competency specifies the outcomes required to identify and describe agreements, protocols, legislation, regulations, codes of practice and handling licences developed to reduce ozone layer depletion and global warming.

Application of the Unit

This unit of competency supports individuals responsible for:

- complying with legal, industry, regulatory and licensing requirements relating to ozone depleting substance (ODS) and synthetic greenhouse gas (SGG) extinguishing agents used in fire protection
- considering the impact of work practices in the fire protection industry on ozone layer depletion and global warming
- proposing changes to reduce the risk of accidental emissions that contribute to ozone layer depletion and global warming.

Licensing/Regulatory Information

The unit supports one or more fire protection industry extinguishing agent handling licences (EAHL) prescribed under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989.

Different states and territories may have regulatory mechanisms that apply to this unit. Candidates are advised to check for regulatory limitations.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | | | |
|---|---|-----|---|
| 1 | Apply rules and regulations to the use of ODS and SGG extinguishing agents. | 1.1 | Requirements of relevant <i>rules and regulations</i> are <i>confirmed</i> and applied to <i>work procedures</i> to prevent ODS and SGG emissions. |
| | | 1.2 | <i>Compliance requirements are checked</i> and <i>action</i> is taken according to organisational policies and procedures, ODS and SGG policies and procedures, and best practice requirements. |
| 2 | Identify ODS and SGG handling licences, trading authorisations and usage permits. | 2.1 | Types of ODS and SGG <i>extinguishing agent handling licences</i> , licence requirements and <i>entitlements of licensees</i> are identified. |
| | | 2.2 | Extinguishant trading authorisations are identified. |
| | | 2.3 | Halon special permit usage requirements are identified. |
| 3 | Apply an understanding of ozone layer depletion and global warming. | 3.1 | Role and functions of <i>ozone layer</i> are identified and explained. |
| | | 3.2 | Factors involved with, and effects of, <i>global warming</i> are identified and described. |
| | | 3.3 | <i>ODS and SGG extinguishing agents</i> used in fire protection industry are identified by type. |
| | | 3.4 | <i>Effect of ozone depletion and global warming</i> on |

human health, environment and fire protection industry work practices is described.

3.5 Relevant fire protection industry ODS and SGG work practices are identified.

3.6 Improvements to ODS and SGG work practices are identified and proposed to reduce the risk of accidental emissions.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- language, literacy and numeracy skills to:
 - communicate with others clearly and concisely, verbally and in writing
 - read and comply with work industry regulations and codes of practice
 - interpret information
- initiative and enterprise skills to:
 - seek advice on license requirements
 - apply understanding of ozone layer depletion and global warming to change and improve fire protection industry work practices
 - identify and act upon learning opportunities
- technology skills to use technology to access information

Required knowledge

- effect of ozone layer
- actions to take where a breach of ODS and SGG policies and procedures occurs
- effect of:
 - ODS and SGG emissions on ozone depletion and global warming
 - ozone depletion and global warming on environment and human health
- factors involved in global warming
- implications of not applying ODS and SGG legislative requirements to the workplace
- key features of:
 - legislation, regulations and standards applicable to ozone protection in the fire protection industry
 - fire protection industry codes of practice
- ODS and SGG substances used in the fire protection industry
- ODS and SGG EAHL features and requirements, authorisations and permit requirements

- relevant federal, state or territory legislation that affects organisational operations

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

<p>Overview of assessment</p>	<p>This unit of competency could be assessed by oral or written questioning covering:</p> <ul style="list-style-type: none"> • underpinning knowledge of the effects of ODS and SGG emissions and current arrangements • workplace examples of action taken to reduce risk of emissions and responses to potential or actual breaches of legislation.
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>A person who demonstrates competency in this unit must be able to provide evidence of the required skills and knowledge specified in this unit.</p> <p>In particular the person should demonstrate the ability to:</p> <ul style="list-style-type: none"> • apply understanding of ozone layer depletion and global warming for: <ul style="list-style-type: none"> • discussing the effect of ODS and SGG emissions on the ozone layer and global warming • describing the impact of ozone depletion and global warming on human health and the environment • assessing impact on fire protection industry work practices • proposing changes to fire protection industry work practices to meet ODS and SGG legal requirements • taking action to respond to potential and actual breaches of ODS and SGG regulations • locate, interpret and explain: <ul style="list-style-type: none"> • ODS and SGG legal requirements for handling extinguishing agents in the fire protection industry • EAHL types, associated responsibilities, usage permits and trading authorisations • agreements, protocols, regulatory requirements, fire protection industry code of practice, and Australian standards relevant to EAHL.
<p>Context of and specific resources for assessment</p>	<p>Assessment of essential underpinning knowledge may be conducted in an off-site context. It is to comply with relevant regulatory or Australian standards' requirements.</p>

	<p>Resource implications for assessment include:</p> <ul style="list-style-type: none"> • assessment documentation • necessary legislation and regulatory documents, manuals, textbooks and other relevant documentation • training and assessment record books.
Method of assessment	<p>Assessment methods must:</p> <ul style="list-style-type: none"> • satisfy the endorsed Assessment Guidelines of the Property Services Training Package • include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application • reinforce the integration of employability skills with workplace tasks and job roles • confirm that competency is verified and able to be transferred to other circumstances and environments.
Guidance information for assessment	<p>Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.</p> <p>Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.</p> <p>This unit could be assessed on its own or in combination with other units relevant to the job function.</p>

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p><i>Rules and regulations</i> may include:</p>	<ul style="list-style-type: none"> • dangerous goods regulations • environmental regulations • fire protection industry codes of practice • licensing arrangements, such as EAHL • manufacturers' system manuals • ODS and SGG legislation, codes and regulations, including
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	<ul style="list-style-type: none"> penalties and policing • OHS legislation, regulations and codes • other relevant legislation relating to fire protection equipment, including: <ul style="list-style-type: none"> • international shipping codes • marine codes for different Australian States • requirements of Australian petroleum industry • relevant agreements and protocols • relevant Australian standards, such as: <ul style="list-style-type: none"> • AS 1851 Maintenance of fire protection systems and equipment • note: Australian standards are frequently revised and users must always check for currency and amendments • relevant federal, state and territory Acts, regulations and codes.
Requirements may be <i>confirmed</i> with:	<ul style="list-style-type: none"> • colleagues • managers • supervisors • team leaders.
<i>Work procedures</i> may include:	<ul style="list-style-type: none"> • assignment instructions • equipment manufacturers’ requirements • instructions from colleagues, supervisor or manager • personal protective equipment requirements • reporting and documentation requirements • specific customer requirements.
<i>Checking compliance requirements</i> may include ensuring that:	<ul style="list-style-type: none"> • persons trading in ODS and SGG hold the appropriate trading authorisation or ODS and SGG permit • scope of work to be undertaken is covered by the appropriate license.
<i>Action</i> may include:	<ul style="list-style-type: none"> • advising customer • documenting non-compliance • making equipment safe • reporting, as required.
Types of <i>extinguishing agent handling licence</i> include:	<ul style="list-style-type: none"> • control systems installation, commissioning and decommissioning • fixed system installation and decommissioning • fixed system testing and maintenance • portable fire extinguisher maintenance • recovery, reclamation, fill and recycling • warehouse maintenance.
<i>Entitlements of licensees</i> include:	<ul style="list-style-type: none"> • portable fire extinguisher maintenance licence entitles holder: <ul style="list-style-type: none"> • to charge and recharge a portable fire extinguisher with

	<ul style="list-style-type: none">• non-ODS and SGG agent<ul style="list-style-type: none">• note: a reclaim and refill licence is required to charge or recharge a portable extinguisher with ODS or SGG• repair the extinguisher valve• fixed system installation and decommissioning licence entitles holder to:<ul style="list-style-type: none">• install and decommission a gaseous fire-extinguishing system (fire protection equipment) including to:<ul style="list-style-type: none">• install and disconnect actuation devices (mechanisms) to and from container valves• install and disconnect gaseous agent containers• install and disconnect interconnections to other gaseous system containers• install and disconnect ancillary equipment connections to manifold and pipework• attach and remove transport equipment, such as valve outlet and actuator port caps, plugs and locking devices installed to prevent accidental discharge• commission actuation control devices set to operate and engage safety devices as needed and decommission these devices• fixed system testing and maintenance licence entitles holder to:<ul style="list-style-type: none">• test and maintain a gaseous fire-extinguishing system (fire protection equipment), including to:<ul style="list-style-type: none">• test actuation release systems• disconnect and reconnect actuation devices (mechanisms)• disconnect and reconnect interconnections to other gaseous system containers• disconnect and reconnect ancillary equipment connections from containers to manifold and pipework• test actuation devices (mechanisms)• perform tests and maintenance on any fire detection and alarm system, including any remote operation panel and actuation and control system that interfaces with or forms part of a gaseous fire-extinguishing system• perform tests and maintenance on gaseous agent containers and ancillary equipment connections from containers to manifold and pipework• recovery, reclamation, fill and recycling licence entitles holder to:<ul style="list-style-type: none">• recover, reclaim, fill and recycle an extinguishing agent into and from a fire extinguisher and gaseous fire-extinguishing system container, from and to a bulk agent container
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	<ul style="list-style-type: none"> • warehouse maintenance licence entitles holder to: <ul style="list-style-type: none"> • monitor for leakage stocks of extinguishing agent bulk agent containers in a warehouse and, as needed, to transfer extinguishing agent from a leaking storage container • control systems installation, commissioning and decommissioning licence entitles holder to: <ul style="list-style-type: none"> • install, commission and decommission a fire detection and alarm system, including any remote operation panel and actuation and control system that interfaces with or forms part of a gaseous fire-extinguishing system.
<p><i>Ozone layer</i> facts include:</p>	<ul style="list-style-type: none"> • composed of ozone (O₃), which is a form of oxygen in which the oxygen molecule contains three atoms of oxygen instead of the usual two • ozone forms less than 0.4 parts per million of the atmosphere • about 90% of ozone is in upper part of atmosphere (stratosphere) • most ozone is in the layer from 20 to 25 km above the earth's surface.
<p><i>Global warming</i> involves:</p>	<ul style="list-style-type: none"> • carbon dioxide found in small quantities (about 350 parts per million) in the atmosphere • carbon dioxide trapping infra red (heat) radiation and warming the atmosphere – the greenhouse effect.
<p><i>ODS and SGG extinguishing agents</i> may include:</p> <p>Note list format: product name (other names) use</p> <p>Check the latest amendments to the Ozone Protection and Synthetic Greenhouse Gas Management Act for the current list of ODS and SGG extinguishing agents.</p>	<ul style="list-style-type: none"> • ODS and SGG extinguishing agents commonly used in Australia: <ul style="list-style-type: none"> • FM200 (FE-227 Heptafluoropropane, HFC-227ea) used as a total flooding extinguishing agent and as a replacement for Halon 1301 • Halon 1211 (BCF, Halon 1211 BCF, Bromochlorodifluoromethane) used as a streaming agent – requires a special permit in Australia • Halon 1301 (BTM, Halon 1301 BTM, Bromotrifluoromethane) used as a total flooding agent – requires a special permit in Australia • NAF-P-III (HCFC Blend C) used as a streaming agent • NAF-P-IV (HCFC Blend E) used as a streaming agent • NAF-S-III (HCFC Blend A) used as a total flooding agent • SF₆ (Sulfurhexafluoride) used as an inerting agent in sealed high voltage switchgear • ODS and SGG extinguishing agents not commonly used in Australia: <ul style="list-style-type: none"> • Blitz III (HCFC Blend D) used in flooding systems • CFC-11 (Trichlorofluoromethane) may be found as a propellant in some powder fire extinguishers (this product is banned in Australia but may be found on incoming foreign

	<p>vessels)</p> <ul style="list-style-type: none"> • FC-2-1-8 (CEA-308) used in flooding systems • FC-3-1-10 (CEA-410) used in flooding systems • FC-5-1-14 (CEA-614) used as a streaming agent • FE-13 (Trifluoromethane, HFC-23) used as a total flooding agent • FE-241 (Chlorotetrafluoroethane, HCFC-124) used as a total flooding agent for non-occupied spaces and as a streaming agent • FE-25 (Pentafluoroethane, HFC-125) used in inerting and explosion suppression applications • FE-36 (Hexafluoropropane, HFC-236fa) used in portable fire extinguishers – is a replacement for Halon 1211 and Halon 1301 • FM100 (HBFC-22B1) used in portable fire extinguishers • Halon 2402 (Dibromotetrafluoroethane) limited use in military systems – requires a special permit in Australia • Halotron I (HCFC Blend B or HCFC-123) used as a total flooding agent and streaming agent • Halotron II (blend of HFC-143a and HFC-125) used as a total flooding agent and as a replacement for Halon 1301 • HCFC-22 (Chlorodifluoromethane) used as a propellant in some powder fire extinguishers (this product is banned in Australia but may be found on incoming foreign vessels) • HFC-134a (Unsymmetric tetrafluoroethane) used as a propellant in some powder fire extinguishers.
<p><i>Effect of ozone depletion and global warming on human health and the environment may include:</i></p>	<ul style="list-style-type: none"> • changes to work practices, including those in the fire protection industry • constraints on: <ul style="list-style-type: none"> • aquatic ecosystems • human immune system • increased: <ul style="list-style-type: none"> • incidence of photochemical smog • risk of: <ul style="list-style-type: none"> • cataracts • skin cancer • inhibited growth of plants • reduced production of agriculture.

Unit Sector(s)

Fire protection equipment

Custom Content Section

Not applicable.

CPPFES2047A Inspect and test control and indicating equipment

Modification History

Revised unit

Unit updated and equivalent to PRMPFES47A Inspect and test control and indicating equipment

Unit Descriptor

This unit of competency specifies the outcomes required to complete routine monthly and six-monthly inspect and test procedures to verify that control and indicating equipment (CIE) for a fire alarm system functions as intended. The unit involves working safely, isolating and resetting CIE, conducting compliance tests, visually inspecting, identifying non-compliance defects, and fulfilling mandatory reporting requirements.

Application of the Unit

This unit of competency supports fire protection technicians responsible for inspecting CIE and routinely testing their operational functions to ensure that fire alarm systems are working as intended.

Licensing/Regulatory Information

The unit supports one or more extinguishing agent handling licences (EAHL) prescribed under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989.

Licence to practise: The skills and knowledge described in this unit do not require an electrical licence or an Australian Communications and Media Authority cabling licence to practise.

Service technicians are not permitted to undertake any installation, replacement, maintenance and repair functions that are restricted to licensed trades or occupations (subject to relevant state and territory regulations).

Different states and territories may have regulatory mechanisms that apply to this unit. Candidates are advised to check for regulatory limitations.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | | | |
|---|--|-----|---|
| 1 | Plan to conduct routine monthly or six-monthly inspect and test operations on CIE. | 1.1 | <i>Occupational health and safety (OHS) policies and procedures</i> for a given work area are obtained and reviewed. |
| | | 1.2 | Established OHS requirements, risk control measures for ozone depleting substance (ODS) and synthetic greenhouse gas (SGG) emission, and <i>organisational requirements</i> are followed in preparation for <i>maintenance activity</i> . |
| | | 1.3 | Safety <i>hazards</i> are noted, and established risk control measures for on-site work are implemented. |
| | | 1.4 | <i>Work permits</i> are organised prior to entering customer premises. |
| | | 1.5 | <i>Relevant persons</i> are consulted to coordinate work effectively with other work site staff. |
| | | 1.6 | Locations of <i>system components and materials</i> are determined from specifications and <i>installation drawings</i> . |
| | | 1.7 | Inspection and test procedures are arranged to suit <i>CIE</i> according to <i>legislative and industry requirements</i> , Australian standards, job schedule and manufacturers' instructions. |
| | | 1.8 | <i>Documentation</i> needed to conduct tests is confirmed according to <i>work procedures</i> and job requirements. |

- 1.9 **Tools, equipment and test devices** are checked for correct operation and safety according to work procedures and job requirements.
- 2 Inspect CIE.
- 2.1 ODS, SGG and OHS policies and procedures are followed and risk control measures are applied when inspecting CIE.
- 2.2 CIE functions to be used to conduct routine tests according to relevant Australian standard, are identified in manufacturers' instructions.
- 2.3 Alarm zone circuits, plant and other **system interfaces** to be isolated to allow conduct of maintenance activity are identified according to OHS, **ODS and SGG extinguishing agent** emission requirements and work procedures.
- 2.4 Circuits and **actuators** to be isolated are identified.
- 2.5 Visual inspections are conducted according to relevant Australian standard for monthly and six-monthly testing.
- 2.6 CIE inspection results are validated against requirements according to relevant Australian standard.
- 3 Test CIE.
- 3.1 ODS, SGG and OHS policies and procedures are followed and risk control measures are applied when testing CIE.
- 3.2 Circuits, actuators, **back-to-base facilities** and other system interfaces are isolated according to work procedures.
- 3.3 Alarm zone circuits, plant and other system interfaces are confirmed as isolated to make sure system cannot be activated during testing.
- 3.4 Monthly and six-monthly tests are performed according to AS 1851, with CIE and components checked to confirm functionality according to manufacturers' instructions, system **finalised design documentation** and organisational requirements.
- 3.5 Methods for dealing with unexpected situations are

- discussed with relevant persons and documented.
- 3.6 Approval of authorised relevant persons is obtained in order to deal safely with unexpected situations.
- 4 Report findings of inspection and testing.
- 4.1 ODS, SGG and OHS policies and procedures, risk control measures and work procedures are followed when reporting inspect and test findings.
- 4.2 Work site and equipment are cleaned and made safe according to work procedures.
- 4.3 Non-compliance defects are identified and reported according to work procedures.
- 4.4 Recommendations for rectifying defects are made according to work procedures.
- 4.5 CIE is reset to operational state.
- 4.6 Documentation is completed according to work procedures and relevant persons are notified.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- customer service skills
- language, literacy and numeracy skills to:
 - communicate with others clearly and concisely, verbally and in writing
 - document test results and non-compliance defects neatly and legibly
 - read and comply with work instructions and specifications
 - read and interpret final design documentation and manufacturers' instructions
 - read and record measurements
- planning and organising skills to:
 - estimate time to complete activities
 - prioritise tasks
- skills to work safely when:
 - applying workplace housekeeping procedures
 - identifying work area hazards in preparation for inspection and test procedures

- removing debris caused by inspect and test operations in the work area
- selecting and using tools, equipment and materials for specific tasks
- interpersonal skills to relate to people from a range of social and cultural backgrounds
- technical skills to:
 - check routine service details of fire alarm system components and materials
 - identify and isolate zone circuits, plant, back-to-base facilities, actuators and other system interfaces
 - perform routine monthly and six-monthly inspect and test procedures according to AS 1851 Maintenance of fire protection systems and equipment
 - physically isolate actuators to inhibit operation
 - reset CIE to operational state
 - test actuators for operation and reset to operational state
 - verify compliance and functionality of CIE against monthly and six-monthly schedules in AS 1851 Maintenance of fire protection systems and equipment

Required knowledge

- action to take when a breach of OHS, ODS and SGG or other policy occurs
- awareness of on-site work permit requirements
- common controls and indicators on CIE
- detection and warning components connected to CIE
- environmental conditions that cause actuators to create false alarms
- federal, state or territory legislation that affects organisational operations, including:
 - anti-discrimination and diversity
 - equal employment opportunity
- industrial relations issues relevant to inspecting and testing CIE
- key features of legislation, regulations, codes and standards applicable to inspecting and testing CIE, including:
 - implications of not applying legislative requirements to job functions
 - intent of Australian standard AS 1851 Maintenance of fire protection systems and equipment, in relation to CIE inspect and test operations
- key functional differences between a conventional and addressable CIE
- key operational principles of CIE specifically interfaced to fire-suppression systems
- local controls (LC), local control stations (LCS), aural alarms, visual warning devices (VWD) and actuators on fire-suppression systems interfaced to CIE
- methodology used to conduct AS 1851 Maintenance of fire protection systems and equipment, monthly and six-monthly maintenance schedules relevant to conventional and addressable CIE
- operation of actuators
- safety requirements for using tools, equipment and materials
- tools, equipment and materials for conducting monthly and six-monthly inspect and test procedures on CIE according to AS 1851 procedures
- types of electrical safeguards used to protect persons and property

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

<p>Overview of assessment</p>	<p>This unit of competency could be assessed by observation of at least two practical demonstrations of inspecting and testing CIE specifically interfaced to different fire-suppression systems:</p> <ul style="list-style-type: none"> • conventional fire indicating panels and microprocessor analogue fire indicating panel fire detection systems • fire alarm systems that comply with AS 1670 Fire detection, warning, control and intercom systems – Fire • emergency warning and intercommunication systems that comply with AS 1670.4 Fire detection, warning, control and intercom systems - System design, installation and commissioning - Sound systems and intercom systems for emergency purposes • fire alarm systems interfaced with activating mechanisms of a fire-suppression system. <p>The type of CIE interfaced to fire-suppression systems tested should correlate to the workplace setting of the candidate.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>A person who demonstrates competency in this unit must be able to provide evidence of the required skills and knowledge specified in this unit.</p> <p>In particular the person should demonstrate the ability to:</p> <ul style="list-style-type: none"> • locate, interpret and apply relevant information, standards and specifications • comply with site safety plan, OHS regulations, ODS and SGG regulations (where required), and state and territory legislation applicable to workplace operations • comply with organisational policies and procedures, including quality requirements • communicate and work effectively and safely with others • organise work permits • adhere to safety procedures during inspect and test procedures • identify risk-reduction measures • identify and locate system components and materials • identify, select and use tools, equipment and test equipment • identify and isolate alarm zone circuits, back-to-base facilities, actuators, plant and other system interfaces

	<ul style="list-style-type: none"> • confirm that circuits, plant and other system interfaces are isolated • complete mandatory and optional test and verification requirements applicable to installed fire-suppression systems • perform test procedures on CIE interfaced to fire-suppression systems • visually inspect fire-suppression systems • identify and report non-compliance defects • develop recommendations to rectify defects • reset CIE and fire-suppression system to operational state without unwanted CIE outputs or alarms • complete workplace housekeeping requirements • complete records and documentation.
Context of and specific resources for assessment	<p>Assessment of essential underpinning knowledge may be conducted in an off-site context. It is to comply with relevant regulatory or Australian standards' requirements.</p> <p>Resource implications for assessment include:</p> <ul style="list-style-type: none"> • access to customer premises or a simulated workplace environment • assessment documentation • necessary tools, specialist equipment, manuals and relevant documentation • training and assessment record books.
Method of assessment	<p>Assessment methods must:</p> <ul style="list-style-type: none"> • satisfy the endorsed Assessment Guidelines of the Property Services Training Package • include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application • reinforce the integration of employability skills with workplace tasks and job roles • confirm that competency is verified and able to be transferred to other circumstances and environments.
Guidance information for assessment	<p>Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.</p> <p>Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.</p> <p>This unit could be assessed on its own or in combination with other</p>

	units relevant to the job function.
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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p><i>Occupational health and safety policies and procedures</i> may relate to:</p>	<ul style="list-style-type: none"> • assessing work site for hazards and risks prior to preparing it for work procedure • displaying signs and using barriers in work area • employer and employee rights and responsibilities • incident and accident investigation • OHS audits and safety inspections • OHS hierarchy of control • risk assessment and control measures • safe operating procedures and instructions, including: <ul style="list-style-type: none"> • awareness of electrical hazards • emergency procedures • equipment maintenance and use • first aid • following confined spaces procedures • hazard and risk identification and reporting • use and storage of hazardous substances • using personal protective equipment (PPE), including: <ul style="list-style-type: none"> • appropriate gloves and overalls • dust masks • earmuffs or plugs • hard hats • safety boots or shoes • safety glasses or goggles • sunhats • those for working safely: <ul style="list-style-type: none"> • around electrical wiring, cables and overhead powerlines • around tools and equipment • on ladders and raised platforms.
<p><i>Organisational</i></p>	<ul style="list-style-type: none"> • documentation and information systems and processes

<p>requirements may include:</p>	<ul style="list-style-type: none"> • legal and organisational policies and guidelines, including personnel practices and guidelines outlining work roles, responsibilities and delegations • legislation relevant to inspect and test operations for CIE • OHS policies, procedures and programs • procedures and work instructions to prevent the emission of ODS and SGG in the workplace • use of electronic job scheduling and communication devices.
<p>Maintenance activity may include:</p>	<ul style="list-style-type: none"> • actions to conduct routine maintenance according to AS 1851 Maintenance of fire protection systems and equipment • actions to conduct non-routine maintenance, such as general isolation of a system to allow building works to be completed and subsequent resetting of the system after works completed.
<p>Hazards may include:</p>	<ul style="list-style-type: none"> • environmental, including: <ul style="list-style-type: none"> • improper use of hazardous material and other chemicals • improper use or emission of ODS and SGG; emissions may be caused by: <ul style="list-style-type: none"> • conducting interface tests during commissioning, servicing and decommissioning procedures between container activating mechanisms, CIE and fire alarm system • installing and removing container valve assembly, manifold connection components and activating mechanisms • servicing and maintaining container valve assemblies • transporting, storing and manually handling containers containing ODS and SGG agents • ergonomic, such as incorrect manual-handling methods • obstructive, such as blocked access to emergency entry or exit points • any situation with a potential to cause loss • any source of potential harm • equipment in a work site • hazards associated with electrical or mechanical faults • people in a work site • work methods, plans and procedures.
<p>Work permits may include permits to:</p>	<ul style="list-style-type: none"> • enter a work site • enter a work site at specific times • enter a restricted area within a work site • ensure that specific OHS requirements are met before entering a work site.
<p>Relevant persons may</p>	<ul style="list-style-type: none"> • building owners or nominated representatives • colleagues

<p>include:</p>	<ul style="list-style-type: none"> • customers • managers • supervisors • team leaders.
<p><i>System components and materials</i> may include:</p>	<ul style="list-style-type: none"> • colour graphic visual display units (VDUs) • fire indicator panel components • mimic panels • remote indicating equipment, such as: <ul style="list-style-type: none"> • standby batteries • sub-fire indicator panels • fire detection equipment, such as: <ul style="list-style-type: none"> • data gathering control units • analogue and analogue addressable smoke, heat and gas detectors • warning system equipment, such as: <ul style="list-style-type: none"> • alarm bells • mimic and location panels • warning and strobe lights • warning speakers • fire-suppression systems equipment, such as: <ul style="list-style-type: none"> • actuators, such as pneumatic, electrical, mechanical and manual operation • container discharge valves • fittings, including hose fittings • flexible discharge hoses • pilot and slave tubes • interface equipment to other fire protection and building services systems, such as: <ul style="list-style-type: none"> • door system release controls • electrical interface relays and contacts • flow switches and pressure switches • optical couplers • utility shutdown devices • solenoid valves and other activating mechanisms • interface communication devices, such as: <ul style="list-style-type: none"> • remote public address (PA) system outputs • two-way radios • warden intercommunication phones.
<p><i>Installation drawings</i> may include:</p>	<ul style="list-style-type: none"> • installation drawings that meet the requirements of AS 4214 Gaseous fire extinguishing systems, and AS 1670 Fire detection,

	<p>warning, control and intercom systems, parts 1 and 4, including:</p> <ul style="list-style-type: none"> • ‘for construction’ drawings • ‘as installed’ and ‘as built’ drawings.
<p><i>Control and indicating equipment</i> may include:</p>	<ul style="list-style-type: none"> • fire indicating panels (FIP) approved to AS 1603 Automatic fire detection and alarm systems or AS 4428 Fire detection, warning, control and intercom systems – control and indicating equipment • equipment specifically interfaced to fire-suppression systems: <ul style="list-style-type: none"> • actuation circuit supervision indicators • alarm operation requirements • discharge time delays • dual zone operations • inhibit discharge switches • inoperative status indicators • shutdown operations • system operation indicators • system warning indications.
<p><i>Legislative and industry requirements</i> may include:</p>	<ul style="list-style-type: none"> • building surveyor requirements, such as occupancy permits • dangerous goods regulations • environmental regulations, including ODS and SGG legislation, codes and regulations • fire protection industry codes of good practice • licensing arrangements, such as EAHL • manufacturers’ system manuals • OHS legislation, codes and regulations • relevant federal, state and territory building Acts, regulations and codes, such as: <ul style="list-style-type: none"> • Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 • Building Code of Australia (BCA) • relevant Australian standards, such as: <ul style="list-style-type: none"> • AS 1603 Automatic fire detection and alarm systems • AS 1670 Fire detection, warning, control and intercom systems, parts 1 and 4 • AS 1851 Maintenance of fire protection systems and equipment • AS 4214 Gaseous fire extinguishing systems • AS 4428 Fire detection, warning, control and intercom systems – control and indicating equipment • note: Australian standards are frequently revised and users must always check for currency and amendments • other relevant legislation relating to fire protection equipment,

	<p>including:</p> <ul style="list-style-type: none"> • international shipping codes • marine codes for different Australian States • requirements of Australian petroleum industry.
<p>Documentation may include:</p>	<ul style="list-style-type: none"> • corrective action reports • customer recommendation forms • equipment recommendation forms • expense claims • job cards • maintenance record system • manufacturers’ system documentation • product documentation • service agreements • service test record logbooks • test results and test reports.
<p>Work procedures may include:</p>	<ul style="list-style-type: none"> • assignment instructions • equipment manufacturers’ requirements • instructions from colleagues, supervisors and managers • ODS, SGG and OHS requirements • PPE requirements • reporting and documentation requirements • specific customer requirements.
<p>Tools, equipment and test devices may include:</p>	<ul style="list-style-type: none"> • hand tools, including: <ul style="list-style-type: none"> • hammers • pliers • screwdrivers • spanners • spirit levels • fire equipment spare parts, including: <ul style="list-style-type: none"> • anti-tamper seals • batteries • bulbs and globes • service tags • manual-handling aids, including: <ul style="list-style-type: none"> • hand trucks • lifting straps • trolleys • power tools, including: <ul style="list-style-type: none"> • battery powered drills • hammer drills

	<ul style="list-style-type: none"> • servicing tools and test devices, including: <ul style="list-style-type: none"> • barcode readers • electrical multimeters • hydrostatic test equipment • recharging and pressurising equipment • safety equipment • scales • service tag punches • simulator actuators • sound meters.
<p><i>System interfaces</i> may include:</p>	<ul style="list-style-type: none"> • building management systems • building warning systems • controls for pressurisation systems, air conditioning system shutdowns and smoke spills • operating signals between CIE and building services systems, such as utility shutdown devices.
<p><i>ODS and SGG extinguishing agents</i> may include:</p> <p>Note list format: product name (other names) use</p> <p>Check the latest amendments to the Ozone Protection and Synthetic Greenhouse Gas Management Act for the current list of ODS and SGG extinguishing agents.</p>	<ul style="list-style-type: none"> • ODS and SGG extinguishing agents commonly used in Australia: <ul style="list-style-type: none"> • FM200 (FE-227 Heptafluoropropane, HFC-227ea) used as a total flooding extinguishing agent and as a replacement for Halon 1301 • Halon 1211 (BCF, Halon 1211 BCF, Bromochlorodifluoromethane) used as a streaming agent – requires a special permit in Australia • Halon 1301 (BTM, Halon 1301 BTM, Bromotrifluoromethane) used as a total flooding agent – requires a special permit in Australia • NAF-P-III (HCFC Blend C) used as a streaming agent • NAF-P-IV (HCFC Blend E) used as a streaming agent • NAF-S-III (HCFC Blend A) used as a total flooding agent • SF6 (Sulfurhexafluoride) used as an inerting agent in sealed high voltage switchgear • ODS and SGG extinguishing agents not commonly used in Australia: <ul style="list-style-type: none"> • Blitz III (HCFC Blend D) used in flooding systems • CFC-11 (Trichlorofluoromethane) may be found as a propellant in some powder fire extinguishers (this product is banned in Australia but may be found on incoming foreign vessels) • FC-2-1-8 (CEA-308) used in flooding systems • FC-3-1-10 (CEA-410) used in flooding systems • FC-5-1-14 (CEA-614) used as a streaming agent

	<ul style="list-style-type: none"> • FE-13 (Trifluoromethane, HFC-23) used as a total flooding agent • FE-241 (Chlorotetrafluoroethane, HCFC-124) used as a total flooding agent for non-occupied spaces and as a streaming agent • FE-25 (Pentafluoroethane, HFC-125) used in inerting and explosion suppression applications • FE-36 (Hexafluoropropane, HFC-236fa) used in portable fire extinguishers – is a replacement for Halon 1211 and Halon 1301 • FM100 (HBFC-22B1) used in portable fire extinguishers • Halon 2402 (Dibromotetrafluoroethane) limited use in military systems – requires a special permit in Australia • Halotron I (HCFC Blend B or HCFC-123) used as a total flooding agent and streaming agent • Halotron II (blend of HFC-143a and HFC-125) used as a total flooding agent and as a replacement for Halon 1301 • HCFC-22 (Chlorodifluoromethane) used as a propellant in some powder fire extinguishers (this product is banned in Australia but may be found on incoming foreign vessels) • HFC-134a (Unsymmetric tetrafluoroethane) used as a propellant in some powder fire extinguishers.
<p>Actuators (also known as actuation control devices) may include:</p>	<ul style="list-style-type: none"> • electrical operation: signal generated from CIE panel as part of a fire alarm detection system • manual operation: by direct push lever or pull cable system • mechanical operation: via signal from local control station or fire detector • pneumatic operation: from fire detector (typically heat).
<p>Back-to-base facilities include:</p>	<ul style="list-style-type: none"> • monitoring equipment which is connected by alarm signalling equipment (ASE) from CIE to a communication path (telephone line or radio link) to a monitoring centre • monitoring centres can be operated by or on behalf of a fire authority for the purposes of mobilising and directing firefighting resources to the site where the CIE is installed.
<p>Finalised design documentation may include:</p>	<ul style="list-style-type: none"> • documentation that meets the requirements of AS 4214 Gaseous fire extinguishing systems, and AS 1670 Fire detection, warning, control and intercom systems, parts 1 and 4, including: <ul style="list-style-type: none"> • system concentration and calculations • technical bulletins • material safety data sheets on agents and equipment • manufacturers’ information.

Unit Sector(s)

Fire protection equipment

Custom Content Section

Not applicable.

CPPHES4005 Assess household energy use and efficiency improvements

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and equivalent to CPPHSA4001A Assess household energy use.
Updated to meet the Standards for Training Packages.

Application

This unit specifies the skills and knowledge required to source and analyse information on household energy use and to advise on ways to improve energy efficiency and reduce energy costs in the home.

This unit is for individuals who work independently as home sustainability assessors using specialised knowledge to complete household energy assessments. It involves completing routine and non-routine tasks and dealing with predictable and sometimes unpredictable problems.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

None.

Unit Sector

Home Sustainability.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and organise energy assessment.

1.1 Consult with client to clarify purpose of energy use assessment and respond to questions and concerns.

1.2 Confirm assessment requirements in line with client needs, legislation, regulations, standards, codes and

- government incentive programs for energy efficiency.
- 1.3 Plan energy use assessment in consultation with client and according to work health and safety (WHS) procedures.
 - 1.4 Prepare energy use assessment documentation.
 - 1.5 Confirm that required tools and equipment are available and in working order.
- 2 Compile information on household energy generation, use, and costs.
- 2.1 Gather information on energy use, onsite energy production and storage and energy costs.
 - 2.2 Access and interpret energy bills and metering data.
 - 2.3 Identify main sources of energy use.
 - 2.4 Carry out measurements and observations safely during on-site inspection to estimate energy usage for key energy using appliances.
 - 2.5 Gather information on household occupant behaviours and preferences that impact energy use.
 - 2.6 Record gathered information using suitable data collection tool.
- 3 Analyse data on household energy use.
- 3.1 Identify key features of household energy usage and estimate costs and greenhouse gas emissions for key appliances.
 - 3.2 Reconcile energy use with energy billing data.
 - 3.3 Identify cost effective measures and behavioural opportunities for improving energy efficiency.
 - 3.4 Identify government rebates and other assistance programs for improving household energy efficiency.
 - 3.5 Estimate energy, emissions and cost savings to be gained by implementing measures for improving energy efficiency.

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| 4 Provide information on residential renewable energy. | 4.1 | Source technical information on renewal energy production and storage technologies and inform client. |
| | 4.2 | Evaluate suitability of using residential property for renewable energy systems and discuss with client. |
| | 4.3 | Identify feed in tariffs, government rebates and other assistance programs for installing energy production and storage technologies. |
| 5 Report findings of household energy assessment. | 5.1 | Collate results, recommendations and supporting evidence of energy use assessment. |
| | 5.2 | Document options and potential savings and prioritise recommendations for energy efficiency measures in line with client needs. |
| | 5.3 | Explain report, indicative costs and improvements in household energy efficiency to client. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to interact with clients from diverse social, economic and cultural backgrounds
- numeracy skills to interpret data from gas and electricity meters and accounts and calculate costs and greenhouse gas emissions
- reading skills to interpret data from gas and electricity meters and the outputs of energy measuring tools, technical data from product specifications
- technology skills to use basic computer functions, calculators and measuring tools.

Unit Mapping Information

Supersedes and equivalent to CPPHSA4001A Assess household energy use.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPHES4005 Assess household energy use and efficiency improvements

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and equivalent to CPPHSA4001A Assess household energy use.
Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by safely conducting energy use assessments and identifying efficiency improvements for three different households.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- alternative energy production and storage technologies applicable to residential buildings
- energy ratings and power consumption of common household appliances
- energy types and units of measurement
- hazards and risks and types of personal protective equipment (PPE) to be used when conducting on-site assessments of household energy use
- key requirements of relevant codes, standards, regulations and government incentive programs for household energy efficiency
- major systems and other sources of household energy use:
 - cooking
 - refrigeration
 - washing and drying
 - home entertainment and home office equipment
 - heating and cooling
 - internal and external appliances
 - lighting
 - swimming pools and spas
 - water heating
 - water pumps
- methods for interpreting household energy bills:
 - actual and estimated bills

- plans
- tariffs
- strategies for improving household energy efficiency including impact of building shell on heating/cooling energy use, upgrade options and behavioural changes
- trends in energy use and emissions
- types and uses of energy measuring tools.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- residential buildings to allow achievement of the performance evidence
- codes, standards, legislation and government programs relevant to energy efficiency
- manufacturers' product information on domestic appliances, water heating systems, heating and cooling systems, lighting and electronic products
- technical information on energy production and storage technologies
- personal protective equipment and energy measurement and data collection tools and documentation.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

CPPHES4007 Assess thermal performance of existing residential buildings

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and equivalent to CPPHSA4004A Assess thermal performance of existing residences using non-rating tools and techniques. Updated to meet the Standards for Training Packages.

Application

This unit specifies the skills and knowledge required to source and analyse information on the thermal performance of existing residences. It includes providing advice on ways to improve thermal performance accounting for ownership and type of building, costs and practicalities of implementing improvement recommendations.

This unit is for individuals who work independently as home sustainability assessors using specialised knowledge to complete thermal performance assessments. It involves completing routine and non-routine tasks and dealing with predictable and sometimes unpredictable problems.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

None.

Unit Sector

Home Sustainability.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

1 Plan and organise thermal performance assessment.

1.1 Consult with client to clarify purpose of thermal performance assessment and respond to questions and concerns.

- 1.2 Confirm assessment requirements in line with client needs, legislation, regulations, standards, codes and government incentive programs for improving thermal performance of existing residential buildings.
 - 1.3 Plan thermal performance assessment in consultation with client and according to work health and safety (WHS) requirements.
 - 1.4 Prepare thermal performance assessment documentation and confirm that required tools and equipment are available and in working order.
- 2 Compile and analyse information on thermal performance of residence.
 - 2.1 Gather information from client to clarify building use and construction details.
 - 2.2 Select and fit required personal protective equipment (PPE).
 - 2.3 Carry out measurements and observations during on-site inspection to confirm factors impacting thermal performance.
 - 2.4 Record information using appropriate data collection tool.
 - 2.5 Analyse information to identify strengths and weaknesses in thermal performance of residence.
- 3 Analyse options for improving thermal performance of residence.
 - 3.1 Source technical information on building thermal performance and evaluate suitability for existing residence.
 - 3.2 Identify government rebates and other assistance programs for thermal performance of existing residential buildings.
 - 3.3 Evaluate options for improving thermal performance and reducing emissions of the residence.
 - 3.4 Identify cost effective measures for improving thermal performance of the residence according to organisational requirements.

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| 4 Report findings of thermal performance assessment. | 4.1 | Collate results, recommendations and supporting evidence of thermal performance assessment. |
| | 4.2 | Write up options and prioritise recommendations for thermal performance improvements. |
| | 4.3 | Discuss report and indicative costs and improvements in thermal performance with client. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- oral communication skills to interact with clients from diverse social, economic and cultural backgrounds
- numeracy skills to interpret different units of measurement associated with existing residential buildings and their construction features.

Unit Mapping Information

Supersedes and equivalent to CPPHSA4004A Assess thermal performance of existing residences using non-rating tools and techniques.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPHES4007 Assess thermal performance of existing residential buildings

Modification History

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and equivalent to CPPHSA4004A Assess thermal performance of existing residences using non-rating tools and techniques. Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by conducting thermal performance assessments and identifying thermal performance improvements for a minimum of two different existing residential buildings.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian climate zones, characteristics and data used in thermal performance assessments:
 - diurnal temperature range
 - humidity
 - irradiance
 - minimum and maximum temperature
 - solar geometry
 - wind speed and direction
- building thermal performance principles:
 - glazing, shading and insulation for controlling temperature
 - orientation impacts
 - thermal mass for storing
 - ventilation
- definition of thermal comfort and its role in thermal performance assessments
- hazards and risks and types of personal protective equipment (PPE) to be used when conducting on-site thermal performance assessments
- impact of building design and materials on thermal performance:
 - condensation
 - constraints on choice of building materials

- embodied energy and lifecycle properties of building materials
- thermal performance properties of common building materials
- key requirements of codes, standards, regulations and government incentive programs associated with improving the thermal performance of existing residences
- options for improving thermal performance of existing residences
- passive energy design principles
- physical factors that influence thermal comfort
- relationship between building design, energy consumption and greenhouse gas emissions
- relationship between building thermal performance and thermal comfort
- requirements, documentation and uses of thermal performance ratings
- safe work requirements for on-site thermal performance assessments
- types, advantages and disadvantages of non-rating tools and techniques used to assess thermal performance of residential buildings
- units of measurement for energy and power associated with thermal performance assessments.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- existing residential buildings to allow achievement of the performance evidence
- codes, standards, legislation and government programs relevant to thermal performance of buildings
- required tools and equipment including PPE
- technical reference library and/or (online) access to current technical publications on:
 - building design and materials
 - house energy rating schemes (HERS)
 - building thermal performance for existing buildings
 - Australian climate zones
 - manufacturers' product information on building products and materials.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

CPPSPS4017 Detect leaks in swimming pools and spas

Modification History

Release 1 This version first released with CPP Property Services Training Package Release 9.0.

Supersedes and is equivalent to CPPSPS4017A Detect leaks in swimming pools and spas. Added in content from CPPSPS4011A Comply with regulatory requirements for swimming pool and spa servicing and WHS. Updated to meet the Standards for Training Packages.

Application

This unit specifies the outcomes required to detect leaks in swimming pools and spas. It includes operating leak-detection equipment and reporting on leak-detection activities.

This unit is suitable for swimming pool and spa technicians who work independently using specialised knowledge and skills to solve predictable and unpredictable problems in:

- private swimming pools and spas
- public swimming pools and spas, including:
 - hydrotherapy and therapeutic exercise pools
 - wading and receiving pools associated with water slides
 - wave pools.

All work must be carried out to comply with workplace procedures, in accordance with state/territory work health and safety (WHS), regulations and legislation that applies to the workplace. Legislative and regulatory requirements apply to swimming pool and spa technicians but vary according to state/territory jurisdictions. Users must check with the relevant regulatory authority before delivery.

Service technicians are not permitted to undertake any installation, replacement, maintenance and repair functions that are restricted to licensed trades or occupations.

Pre-requisite Unit

Nil.

Unit Sector

Swimming pool and spa service

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Assess job requirements. | 1.1 Identify relevant Australian standards and regulatory, manufacturer and enterprise requirements related to leak detection. |
| | 1.2 Review work instructions and test to confirm that swimming pool and/or spa is leaking in line with enterprise procedures. |
| | 1.3 Confirm location of related services in line with enterprise procedures. |
| | 1.4 Identify hazards and assess and control risks in the work area in line with WHS and enterprise requirements. |
| 2 Detect leaks. | 2.1 Apply relevant regulations, Australian standards and manufacturer, client and enterprise requirements throughout leak detection. |
| | 2.2 Implement leak detection process using appropriate leak-detection equipment. |
| | 2.3 Seek advice from relevant personnel for activities outside scope of own expertise or licensing. |
| | 2.4 Arrange leak repair in line with testing outcomes and enterprise and statutory requirements. |
| 3 Complete leak detection activities. | 3.1 Clean and store leak-detection equipment in line with enterprise and manufacturer requirements |
| | 3.2 Review and report on work in line with enterprise procedures. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- reading skills to source and interpret technical information, regulations, standards and codes of practice
- oral communication skills to interact with clients from diverse social, economic and cultural backgrounds
- numeracy skills to:
 - perform calculations related to water loss in swimming pools and spas
 - interpret data output from electronic leak-detection equipment.

Unit Mapping Information

Supersedes and equivalent to CPPSPS4017A Detect leaks in swimming pools and spas.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPPSPS4017 Detect leaks in swimming pools and spas

Modification History

Release 1 This version first released with CPP Property Services Training Package Release 9.0.

Supersedes and is equivalent to CPPSPS4017A Detect leaks in swimming pools and spas. Added in content from CPPSPS4011A Comply with regulatory requirements for swimming pool and spa servicing and WHS. Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by:

- Determine job requirements, detect leak and organise repair of leaks in:
 - one swimming pool and one spa made from fibreglass
 - one swimming pool and one spa made from concrete.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- key requirements of relevant commonwealth, state or territory, and local government regulations and Australian standards related to swimming pool and spa servicing:
 - work health and safety
 - public health
 - dangerous goods
 - environment and waste disposal
 - Australian Competition and Consumer Commission product safety guidelines
 - electrical and plumbing regulations related to own work
- enterprise policies and procedures related to:
 - compliance with regulations
 - maintenance of knowledge of regulations
 - roles, responsibilities and limitations of own role
- work instructions:
 - site requirements, including access
 - personal protective clothing and equipment requirements
 - equipment and systems location information

- warranties and guarantees
- hazards and risks associated with swimming pool and spa leak detection
- common structural leak areas:
 - cracks
 - lights
 - main drain and hydrostatic valve
 - pipe openings into pool
 - skimmer bond to pool
 - skimmer throat
 - tile line
 - vinyl liners
- leak-detection equipment:
 - types
 - operating principles
 - safety
 - maintenance procedures
- leak-detection procedures
- signs of potential pool and spa leaks:
 - algae growth or discoloration of water
 - cracks
 - equipment loses prime
 - excess chemical usage
 - excessive water loss
 - pool deck is sinking or lifting
 - pool has air in the system
 - soggy spots around the pool
 - visible equipment leaks
- types of leaks in swimming pools and spas:
 - plumbing leaks
 - pressure leaks
 - static leaks.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be undertaken in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- relevant manufacturer instructions, regulations, codes, standards and enterprise policies and procedures

- relevant tools and equipment, personal protection equipment (PPE)
- technical references with current information on leak detection techniques for swimming pools and spas.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CUASTA403 Operate flying systems

Modification History

Release	Comments
Release 2	This version released with CUA Creative Arts and Culture Training Package version 2.0. Updated assessment conditions section. Updated modification history section to reflect changed name of training package.
Release 1	This version first released with CUA Creative Arts and Culture Training Package version 1.0.

Application

This unit describes the performance outcomes, skills and knowledge required to operate manual and automated flying systems that raise and lower soft hangings and flats, and 'fly' scenery items into and out of performance spaces.

Individuals who apply these skills work autonomously in a team environment as they take responsibility for ensuring the smooth operation of flying systems for productions in the entertainment and events industries.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Media and entertainment production - staging

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for flying operations	1.1 Clarify flying requirements in consultation with relevant personnel and with reference to production documentation 1.2 Plot and run through fly cues, ensuring correct speed and

	<p>timing of each cue</p> <p>1.3 Modify cues as required, in consultation with relevant personnel</p> <p>1.4 Complete pre-show checks to ensure individual components of flying systems are ready for operation and comply with safety requirements</p> <p>1.5 Execute pre-sets and document modifications as required</p>
2. Fly set elements	<p>2.1 Execute fly cues safely according to performance requirements</p> <p>2.2 Use flying systems within their rated capacity and acceptable safety margins</p> <p>2.3 Where counterweight systems are used, keep flown loads and counterweights in balance or under control</p> <p>2.4 Use brake system, handbrake or other stopping devices safely and appropriately</p> <p>2.5 Use control systems according to instructions</p> <p>2.6 Promptly identify problems with flying system operation and rectify or refer to relevant personnel according to organisational procedures and safety regulations</p> <p>2.7 Use communication systems and signals according to organisational procedures and safety requirements</p>
3. Complete post-show tasks	<p>3.1 Reset flying elements at completion of performances according to organisational procedures and safety regulations</p> <p>3.2 Inform relevant personnel of aspects of system operation that require attention</p> <p>3.3 Contribute to evaluations of productions and implement recommendations aimed at improving overall effectiveness of flying operations</p>

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.1, 2.5	<ul style="list-style-type: none"> Interprets production documentation in relation to own duties

Writing	1.3, 1.5	<ul style="list-style-type: none"> • Completes workplace documentation
Oral communication	1.1, 1.3, 2.5, 2.6, 2.7, 3.2, 3.3	<ul style="list-style-type: none"> • Obtains information by listening and questioning • Discusses ideas and solutions when operating flying systems
Numeracy	1.2, 1.3	<ul style="list-style-type: none"> • Calculates timings when plotting and modifying cues
Navigate the world of work	1.1, 1.2, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1	<ul style="list-style-type: none"> • Follows workplace protocols and safety procedures • Undertakes tasks in line with own level of responsibility
Interact with others	1.1, 1.3, 2.5, 2.6, 2.7, 3.2, 3.3	<ul style="list-style-type: none"> • Works collaboratively to achieve shared goals
Get the work done	1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3	<ul style="list-style-type: none"> • Adopts a methodical and logical approach to operating flying systems • Uses control desks and manual systems to fly production elements • Recognises and takes responsibility for addressing predictable, and some less predictable, problems when operating flying systems • Applies a knowledge of staging and flying systems to work activities • Implements improvements based on outcome of evaluations of flying operations

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
CUASTA403 Operate flying systems (Release 2)	CUASTA403 Operate flying systems (Release 1)	Updated assessment conditions section. Updated modification history section to reflect changed name of training package.	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1db201d9-4006-4430-839f-382ef6b803d5>

Assessment Requirements for CUA STA403 Operate flying systems

Modification History

Release	Comments
Release 2	This version released with CUA Creative Arts and Culture Training Package version 2.0. Updated assessment conditions section. Updated modification history section to reflect changed name of training package.
Release 1	This version first released with CUA Creative Arts and Culture Training Package version 1.0.

Performance Evidence

Evidence of the ability to:

- operate flying systems for at least two productions
- follow safety procedures
- work collaboratively.

Note: If a specific volume or frequency is not stated, then evidence must be provided for each of the above points at least once.

Knowledge Evidence

To complete the unit requirements the individual must:

- describe issues and challenges that typically arise when operating flying systems, along with solutions to address them
- explain the link between flying and other aspects of productions and the range of elements that are commonly flown
- explain different ways in which flying systems can be operated
- explain safety issues that impact on flying systems, including regulations about the scope of work that can be undertaken by unlicensed personnel and emergency procedures
- explain sequencing, timing and speed requirements for flying systems in a range of productions

- provide examples of communication systems and correct signals to use when operating flying systems
- explain the following in relation to counterweight systems:
 - loading and unloading cradles
 - safe working loads
 - single and double purchase
 - spreading the load
 - swinging bars
 - where to hang lighting bars and masking.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced in creative arts industry environments. The assessment environment must include access to:

- a venue in which a theatrical flying system is installed
- a production that requires the operation of flying systems.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational educational and training legislation, frameworks and/or standards.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1db201d9-4006-4430-839f-382ef6b803d5>

HLTAID011 Provide First Aid

Modification History

Not applicable.

Application

This unit describes the skills and knowledge required to provide a first aid response to a casualty in line with first aid guidelines determined by the Australian Resuscitation Council (ARC) and other Australian national peak clinical bodies.

The unit applies to all persons who may be required to provide a first aid response in a range of situations, including community and workplace settings.

Specific licensing/regulatory requirements relating to this competency, including requirements for refresher training should be obtained from the relevant national/state/territory Work Health and Safety Regulatory Authorities.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes

Performance criteria describe the performance needed to demonstrate achievement of the element.

1. Respond to an emergency situation.

- 1.1. Recognise and assess an emergency situation.
- 1.2. Ensure safety for self, bystanders and casualty.
- 1.3. Assess the casualty and recognise the need for first aid response.
- 1.4. Seek assistance from emergency services.

2. Apply appropriate first aid procedures.

- 2.1. Perform cardiopulmonary resuscitation (CPR) in accordance ARC guidelines.
- 2.2. Provide first aid in accordance with established first aid principles.
- 2.3. Display respectful behaviour towards casualty.
- 2.4. Obtain consent from casualty where possible.
- 2.5. Use available resources and equipment to make the casualty as comfortable as possible.
- 2.6. Operate first aid equipment according to manufacturers' instructions.
- 2.7. Monitor the casualty's condition and respond in accordance with first aid principles.

3. Communicate details of the incident.
 - 3.1. Accurately convey incident details to emergency services.
 - 3.2. Report details of incident in line with appropriate workplace or site procedures.
 - 3.3. Complete applicable workplace or site documentation, including incident report form.
 - 3.4. Maintain privacy and confidentiality of information in line with statutory or organisational policies.
4. Review the incident.
 - 4.1. Recognise the possible psychological impacts on self and other rescuers and seek help when required.
 - 4.2. Contribute to a review of the first aid response as required.

Foundation Skills

The Foundation Skills describe those required skills (language, literacy, numeracy and employment skills) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and not equivalent to HLTAID003 Provide first aid

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705>

Assessment Requirements for HLTAID011 Provide First Aid

Modification History

Not applicable.

Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the workplace or community setting.

There must be evidence that the candidate has completed the following tasks in line with State/Territory regulations, first aid codes of practice, first aid guidelines determined by the Australian Resuscitation Council (ARC) and other Australian national peak clinical bodies and workplace or site procedures:

- managed, in line with ARC guidelines, the unconscious, breathing casualty including appropriate positioning to reduce the risk of airway compromise
- managed, in line with ARC guidelines, the unconscious, non-breathing adult, including:
 - performing at least 2 minutes of uninterrupted single rescuer cardiopulmonary resuscitation (CPR) (5 cycles of both compressions and ventilations) on an adult resuscitation manikin placed on the floor
 - following the prompts of an automated external defibrillator (AED) to deliver at least one shock
 - demonstrating a rotation of single rescuer operators with minimal interruptions to compressions
 - responding appropriately in the event of regurgitation or vomiting
- managed, in line with ARC guidelines, the unconscious, non-breathing infant, including:
 - performing at least 2 minutes of uninterrupted single rescuer CPR (5 cycles both compressions and ventilations) on an infant resuscitation manikin placed on a firm surface
- managed casualties, with the following:
 - anaphylaxis
 - asthma
 - non-life-threatening bleeding
 - choking
 - envenomation, using pressure immobilisation
 - fractures, dislocations, sprains and strains, using appropriate immobilisation techniques
 - minor wound cleaning and dressing
 - nosebleed
 - shock

- responded to at least one simulated first aid incident contextualised to the candidate's workplace or community setting, where the candidate has no knowledge of the casualty's condition prior to starting treatment, including:
 - identifying the casualty's illness or injury through history, signs and symptoms
 - using personal protective equipment (PPE) as required
 - providing appropriate first aid treatment
 - conveying incident details to emergency services or advising casualty on any required post incident action
 - providing an accurate verbal and written report of the incident
 - reviewing the incident.

Knowledge Evidence

Demonstrated knowledge required to complete the tasks outlined in elements and performance criteria of this unit:

- guidelines and procedures including:
 - ARC guidelines relevant to the provision of first aid
 - first aid guidelines from Australian national peak clinical bodies
 - potential incident hazards and risk minimisation processes when providing first aid
 - infection control procedures, including use of standard precautions and resuscitation barrier devices
 - requirements for currency of skill and knowledge
 - first aid codes of practice
 - appropriate workplace or site procedures relevant to the provision of first aid
 - contents of first aid kits
- legal, workplace and community considerations including:
 - duty of care requirements
 - own skills and limitations
 - consent and how it relates to the conscious and unconscious casualty
 - privacy and confidentiality requirements
 - awareness of potential need for stress management techniques and available support for rescuers
- considerations when providing CPR, including:
 - upper airway and effect of positional change
 - appropriate duration and cessation of CPR
 - appropriate use of an AED
 - safety and maintenance procedures for an AED
 - chain of survival
 - how to access emergency services
- techniques for providing CPR to adults, children and infants including:
 - how to recognise that a casualty is unconscious and not breathing normally

- rate, ratio and depth of compressions and ventilations
- correct hand positioning for compressions
- basic anatomy, physiology and the differences between adults, children and infants relating to CPR
- signs, symptoms and management of the following conditions and injuries:
 - allergic reaction
 - anaphylaxis
 - asthma
 - non-life-threatening and life-threatening bleeding
 - burns
 - cardiac conditions, including chest pain
 - choking
 - diabetes
 - drowning
 - envenomation - all current treatments
 - eye injuries
 - fractures, dislocations, strains and sprains
 - head, neck and spinal injuries
 - hypothermia
 - hyperthermia
 - minor wounds
 - nose-bleed
 - poisoning
 - seizures
 - shock
 - sharps injuries
 - stroke.

Assessment Conditions

Each candidate to demonstrate skills in an environment that provides realistic in-depth, scenarios and simulations to assess candidates' skills and knowledge.

Due to the nature of this type of training, it is acceptable for the performance evidence to be collected in a simulated environment.

Compression and ventilation skills must be demonstrated on resuscitation manikins following ARC guidelines for the purpose of assessment of CPR procedures.

Assessment must ensure access to:

- adult and infant resuscitation manikins following ARC guidelines for the purpose of assessment of CPR procedures
- adrenaline auto-injector training device

- AED training devices
- workplace first aid kit
- placebo bronchodilator and spacer device
- different types of wound dressings and bandages
- blankets and items to treat for shock
- personal protective equipment (PPE)
- workplace injury, trauma or illness record, or other applicable workplace or site incident report form.

Simulated assessment environments must simulate real-life situations where these skills and knowledge would be performed, with all the relevant equipment and resources of that workplace or community environment.

Assessors must satisfy the Standards for Registered Training Organisations' requirements for assessors and must hold this unit or demonstrate equivalent skills and knowledge to that contained within this unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705>

MEM05049 Perform routine gas tungsten arc welding

Modification History

Release 1. Supersedes and is equivalent to MEM05049B Perform routine gas tungsten arc welding

Application

This unit of competency defines the skills and knowledge required to prepare the materials and carry out routine gas tungsten arc welding (GTAW) and applies in a maintenance or manufacturing environment where the weld quality is not required to meet an Australian Standard.

Where welding is required to meet AS 1554 General Purpose or equivalent codes, work health and safety (WHS) regulations and/or licensing requirements Unit MEM05019 Weld using gas tungsten arc welding process should also be selected.

Where the interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measurement is required unit MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of tools is required unit MEM18001 Use hand tools and unit MEM18002 Use power tools/hand held operations, should also be selected as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Fabrication

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, sketches, job sheets or work instructions
2	Prepare materials and equipment for welding	2.1	Identify location of welds in accordance with procedures and job specifications
		2.2	Clean and prepare materials ready for welding
		2.3	Set up welding equipment to meet work requirement
		2.4	Select settings and consumables to suit application
3	Perform routine welding using GTAW	3.1	Weld materials to job requirements
		3.2	Clean welds according to SOPs

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Welds include the following:

- butt
- fillet

Materials include one (1) or more of the following:

- low carbon/mild steels
- aluminium

Prepared includes one (1) or more of the following:

- pre-heating
- setting up jigs
- fixtures
- clamps
- joint preparation

Welding equipment includes the following:

- hoses
- welding leads and gas shrouds
- electrodes
- gas regulator
- liners
- contact tips

Consumables include the following:

- tungsten electrodes, filler wire and shielding gas

Clean includes the following:

- slag and spatter

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM05049B Perform routine gas tungsten arc welding

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM05049 Perform routine gas tungsten arc welding

Modification History

Release 1. Supersedes and is equivalent to MEM05049B Perform routine gas tungsten arc welding

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications from sketches and verbal or written job instructions for performing routine gas tungsten arc welding (GTAW)
- cleaning and preparing materials for welding to specifications
- setting up welding equipment, including selecting settings and consumables to suit application
- consistently welding materials to specifications
- cleaning welds in accordance with SOPs.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe welding practices and procedures and use of personal protective equipment (PPE)
- preparatory requirements
- equipment and equipment settings
- shielding gas properties and applications
- weld characteristics.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing routine GTAW process at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires

- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

MEM05050 Perform routine gas metal arc welding

Modification History

Release 1. Supersedes and is equivalent to MEM05050B Perform routine gas metal arc welding

Application

This unit of competency defines the skills and knowledge required to prepare materials and carry out routine gas metal arc welding (GMAW) and applies in a maintenance or manufacturing environment where the weld quality is not required to meet an Australian Standard or equivalent.

Where welding is required to meet AS 1554 General Purpose or equivalent codes, work health and safety (WHS) regulations and/or licensing requirements unit MEM05017 Weld using gas metal arc welding process should also be selected.

Where the interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measurement is required unit MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of tools is required unit MEM18001 Use hand tools and unit MEM18002 Use power tools/hand held operations, should also be selected as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Fabrication

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, sketches, job sheets or work instructions
2	Prepare materials and equipment for welding	2.1	Identify location of welds in accordance with procedures and job specifications
		2.2	Clean and prepare materials ready for welding
		2.3	Set up welding equipment to meet work requirement
		2.4	Select settings and consumables to suit application
3	Perform routine welding using GMAW	3.1	Weld materials to job requirements
		3.2	Clean welds according to SOPs

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Welds include the following:

- butt
- fillet

Materials include one (1) or more of the following:

- low carbon
- mild steels

Prepared includes one (1) or more of the following:

- pre-heating
- setting up jigs
- fixtures
- clamps
- joint preparation

Welding equipment includes the following:

- hoses
- welding leads and gas shrouds
- gas regulators
- liners
- contact tips

Consumables include the following:

- filler wire and shielding gas

Clean includes the following:

- slag and spatter

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM05050B Perform routine gas metal arc welding

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM05050 Perform routine gas metal arc welding

Modification History

Release 1. Supersedes and is equivalent to MEM05050B Perform routine gas metal arc welding

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures and safe work practices
- identifying and interpreting specifications from sketches and verbal or written job instructions for performing routine gas metal arc welding (GMAW)
- cleaning and preparing materials for welding to specifications
- setting up welding equipment, including selecting settings and consumables to suit application
- consistently welding materials to specifications
- cleaning welds in accordance with SOPs.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe welding practices and procedures and use of personal protective equipment (PPE)
- different current and voltage settings, gas flow rates wire diameters, wire feed speed and other variables to suit typical situations
- material and equipment preparation
- properties and characteristics of materials and consumables
- equipment and equipment settings
- shielding gas properties and applications
- post-welding treatments
- weld characteristics.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing routine GMAW process at least to the level being assessed with relevant industry knowledge and experience

- satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

MEM11011 Undertake manual handling

Modification History

Release 1. Supersedes and is equivalent to MEM11011B Undertake manual handling

Application

This unit of competency defines the skills and knowledge required to lift and move materials manually and/or using basic manual handling equipment in a wide range of environments.

Maximum manual lifting weight is limited to Safe Work Australia recommendations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Materials handling

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | | |
|---|--------------------------------------|-----|--|
| | | 1.3 | Use appropriate personal protective equipment (PPE) in accordance with SOPs |
| | | 1.4 | Identify job requirements from specifications, job sheets or work instructions |
| 2 | Lift materials manually | 2.1 | Determine material weight correctly utilising most appropriate technique, and assess risks associated with lifting |
| | | 2.2 | Undertake lifting techniques to Safe Work Australia recommended procedures and having regard to types of movement, methods, storage, height and position |
| 3 | Move/shift materials manually | 3.1 | Select appropriate equipment, as required |
| | | 3.2 | Place material safely and securely on moving equipment |
| | | 3.3 | Relocate material ensuring safety of personnel and security of material |
| | | 3.4 | Unload material and place in a safe and secure manner |

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Material weight includes

- determined using scales

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

one (1) or more of the following:

- interpreting signage

Lifting techniques include one (1) or more of the following:

- individual
- team lifting
- use of appropriate lifting equipment

Appropriate equipment includes one (1) or more of the following:

- hand trolleys
- wheelbarrows
- motorised/hand pallet trucks (not sit on)
- hand carts
- dedicated production or process lifting equipment
- baskets, spreader bars, cradles or the like attached to lifting equipment

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM11011B Undertake manual handling

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM11011 Undertake manual handling

Modification History

Release 1. Supersedes and is equivalent to MEM11011B Undertake manual handling

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- assessing the risks associated with lifting materials manually and determining the most appropriate technique
- selecting and using the appropriate equipment to move/shift materials ensuring safety of personnel and security of material.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- manual handling techniques, including individual or team lifting
- appropriate equipment associated with move/shift materials
- hazards of incorrect procedures
- Safe Work Australia standards for manual handling.

Assessment Conditions

- Assessors must:
 - have vocational competency in undertaking manual handling at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires

- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

MEM13015 Work safely and effectively in manufacturing and engineering

Modification History

Release 1. New unit. Supersedes and not equivalent to MEM13014A Apply principles of occupational health and safety in the work environment, MEM14004A Plan to undertake a routine task, MEM15002A Apply quality systems, MEM15024A Apply quality procedures, MEM16007A Work with others in a manufacturing, engineering or related environment.

Application

This unit of competency defines the skills and knowledge required to work effectively in manufacturing and engineering work situations, including planning routine work and participating in and following work health and safety (WHS) procedures. The unit applies to working either individually or in a team situation and includes contributing to work-related group activities in a manufacturing or engineering workplace.

This unit covers WHS skills associated with carrying out routine operational activities safely and in compliance with legislative and regulatory requirements.

The unit covers the skills associated with participation in quality systems, communication and cooperation with others. The unit applies to workplaces with informal or formal quality management and improvement systems.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 2

Pre-requisite Unit

Nil.

Competency Field

Work health and safety

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | | |
|---|--|-----|--|
| 1 | Determine job requirements | 1.1 | Identify goals, objectives and task requirements and clarify with appropriate persons, where required |
| | | 1.2 | Prioritise task requirements |
| 2 | Review and modify plan | 2.1 | Adjust timelines, priorities and other planning components to respond to contingencies, as necessary |
| | | 2.2 | Re-examine results of work activity against the plan and identify possible improvements to future performance of work tasks |
| 3 | Work effectively with others in the workplace | 3.1 | Identify own role and responsibilities and relationship to other employees, including employees performing related/interdependent activities |
| | | 3.2 | Identify supervisors and other sources of advice and assistance for own work |
| | | 3.3 | Apply effective interpersonal skills to interact with others and contribute to activities and objectives |
| | | 3.4 | Review and modify own work progress to complement the work of others |
| | | 3.5 | Report own work progress to supervisors and where required to fellow employees using standard operating procedures (SOPs) |
| 4 | Follow safe work practices | 4.1 | Check for and identify hazards in the work area before and during work |
| | | 4.2 | Follow procedures for avoiding or controlling hazards already identified in instructions, signage or other workplace communication |
| | | 4.3 | Identify and report risks and hazards not covered by procedures |

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.
		4.4 Select, use and maintain relevant personal protective equipment (PPE) by procedures, as required
		4.5 Recognise emergency situations and take appropriate initial emergency action
		4.6 Follow procedures for responding to emergencies
		4.7 Report incidents, injuries and other WHS non-conformances according to procedures
5	Work within a quality system	5.1 Follow instructions and procedures and perform duties in accordance with standard operating procedures or quality system requirements
		5.2 Ensure conformance of product and process to specifications
		5.3 Report defects and non-conformance to specifications according to procedures
		5.4 Participate in process improvement procedures, where required
6	Participate in workplace health and safety procedures	6.1 Identify workplace health and safety policies and procedures relevant to own work and work area
		6.2 Identify relevant WHS managers and representatives for own work area
		6.3 Provide input to minimise hazards in work area in line with organisation WHS procedures and participative arrangements

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Quality systems include one (1) or more of the following

- quality planning
- quality assurance
- quality control
- quality improvement procedures and processes

Task requirements include one (1) or more of the following:

- timeframe
- quality requirements
- outcome and performance requirements
- job history
- checks
- reporting requirements
- tools and equipment
- materials and parts
- supporting documents

Specifications include one (1) or more of the following:

- task lists
- instructions
- manufacturer manuals
- diagrams and schematics
- sketches
- parts lists
- SOPs

Planning includes one (1) or more of the following:

- preparing a plan to complete the task
- organising task into manageable steps including appropriate order and timing
- monitoring the progress of processes related to own responsibilities
- applying relevant WHS instructions
- collecting, sorting, recording results of work
- seeking advice and guidance on setting priorities and timeframes

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

- seeking feedback from supervisor, trainer or mentor

Unit Mapping Information

Release 1. New unit. Supersedes and not equivalent to MEM13014A Apply principles of occupational health and safety in the work environment, MEM14004A Plan to undertake a routine task, MEM15002A Apply quality systems, MEM15024A Apply quality procedures, MEM16007A Work with others in a manufacturing, engineering or related environment.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM13015 Work safely and effectively in manufacturing and engineering

Modification History

Release 1. New unit. Supersedes and not equivalent to MEM13014A Apply principles of occupational health and safety in the work environment, MEM14004A Plan to undertake a routine task, MEM15002A Apply quality systems, MEM15024A Apply quality procedures, MEM16007A Work with others in a manufacturing, engineering or related environment.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and avoiding or controlling hazards
- reporting hazards, incidents, injuries and other work health and safety (WHS) non-conformances following SOPs
- recognising and responding to emergencies following SOPs
- identifying and obtaining, instructions and information on job requirements, including one or more of the following:
 - verbal or written job instructions
 - specifications
 - SOPs
 - charts
 - lists
- identifying and responding to contingencies, including:
 - equipment breakdowns
 - non-conforming components
 - safety hazards
- recording information into proforma workplace documents, including:
 - production tally forms
 - quality control forms
 - safety incident forms
- performing assigned tasks and checking outcome of own work for conformance to specifications
- identifying own responsibilities within the workplace quality system
- giving and receiving feedback on own and group work
- seeking assistance from supervisors and mentors.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use and application of personal protective equipment
- basic quality system terminology and concept, including:
 - quality assurance
 - quality control
 - quality improvement
- procedures to be followed in performing own work
- objectives, requirements and specifications to which the individual's work is to comply
- costs and consequences of poor quality
- effective interpersonal skills:
 - effective listening
 - basic speaking skills
 - use of workplace terminology and jargon
 - giving and receiving feedback
 - checking and clarifying task-related information
 - verbal, visual and written instructions
 - appropriate modes and methods of communication
- barriers to effective communication
- sources of technical expertise/assistance
- hazards and control measures associated with workplace activities.

Assessment Conditions

- Assessors must:
 - have vocational competency in working safely and effectively in manufacturing and engineering at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills

- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

MEM16006 Organise and communicate information

Modification History

Release 1. Supersedes and is equivalent to MEM16006A Organise and communicate information

Application

This unit of competency covers the skills and knowledge required to access, organise and communicate information related to production, maintenance or associated processes or tasks that apply in manufacturing, engineering or related environments.

For accessing and recording of data requiring system knowledge and judgement, Unit MEM16008 Interact with computing technology should be selected.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering

Competency Field

Communication

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Access information	1.1	Determine information requirements of tasks and access relevant information from a range of sources
		1.2	Recognise and use workplace terminology correctly

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
2 Organise and analyse information	2.1 Interpret information and organise in accordance with work requirements
	2.2 Determine relevance and implications for immediate work requirements
3 Communicate organised information using established workplace methods	3.1 Identify purpose of communication and appropriate communication method
	3.2 Communicate information using established workplace methods

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Range of sources include using one (1) or more of the following:	<ul style="list-style-type: none"> • job instructions • specifications • standard operating procedures (SOPs) • charts • lists • documents • computer data • drawings • sketches • tables
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This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

- technical manuals and/or charts
- other applicable reference material

Determining relevance of information includes one (1) or more of the following:

- checking relevance of information to own work
- selecting task relevant information from a larger document or from a diagram
- preparing an opinion based on analysis of simple facts
- expressing an opinion on the cause of faults

Workplace terminology refers to one (1) or more of the following:

- equipment
- processes
- workplace areas
- staff
- procedures

Established workplace methods include using one (1) or more of the following:

- proforma reports
- data entry
- verbal
- drawings

Purpose of communication includes one (1) or more of the following:

- simple incident/non-conformance report
- maintenance request
- production records
- material usage records
- work records
- other standard workplace records

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM16006A Organise and communicate information

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM16006 Organise and communicate information

Modification History

Release 1. Supersedes and is equivalent to MEM16006A Organise and communicate information

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- accessing and recording relevant information from a range of sources
- recognising and using workplace appropriate terminology
- reading, interpreting and following information in workplace documentation
- checking and clarifying information
- organising, categorising and sequencing information
- communicating using appropriate methods and procedures for a variety of situations.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures
- types of information relevant to the workplace and required tasks
- terminology used in the workplace relevant to own work
- available sources of information
- information analysis techniques appropriate to tasks and position
- methods of categorising and organising information including correct sequencing of information
- methods of recording and communicating information.

Assessment Conditions

- Assessors must:
 - have vocational competency in organising and communicating information at least to the level being assessed with relevant industry knowledge and experience

- satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

MSFFF2006 Apply surface coatings by spray gun

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers applying surface coatings by a handheld spray gun.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Competency Field

Unit Sector

Furniture finishing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Plan and prepare for work	1.1	Characteristics of the surface and the required surface coating are identified from work orders or instructions
		1.2	Processing and application techniques, time and safety requirements are identified and used for work planning
		1.3	Work health and safety (WHS) requirements, including ventilation requirements and personal protection needs, are observed throughout the work
		1.4	Tools, equipment and accessories are identified and checked for safe and effective operation for the surface coating task
		1.5	Surface coatings are identified and prepared, as required, for the surface coating tasks

- | | | | |
|---|--------------------------------|-----|--|
| 2 | Check and prepare for spraying | 2.1 | Products with surface or other faults are identified and faults reported or repaired as appropriate |
| | | 2.2 | Other products and equipment in the workplace are protected from overspray |
| | | 2.3 | Trial applications of surface materials are made to check condition of spray system, spray patterns, equipment operation, materials viscosity and specified surface finish |
| | | 2.4 | Unserviceable components are cleaned or replaced and spray system re-assembled |
| | | 2.5 | Spray pattern faults are identified and rectified in accordance with workplace procedures. |
| | | 2.6 | Material faults are identified and workplace procedures for rectification are followed |
| 3 | Apply surface coating | 3.1 | Surfaces are kept free of contamination |
| | | 3.2 | Surface coatings are applied according to workplace procedures |
| | | 3.3 | Surface build and coverage is checked against workplace requirements for even spread and thickness |
| | | 3.4 | Rectification of surface faults are made in accordance with workplace procedures |
| | | 3.5 | Products are inspected and approved for suitability for further processing |
| 4 | Clean work area | 4.1 | Equipment is cleaned and inspected for serviceable condition and stored appropriately |
| | | 4.2 | Unserviceable equipment is tagged, faults are identified and appropriate personnel are informed |
| | | 4.3 | Work area, including spray booth, is cleaned and returned to approved condition |
| | | 4.4 | Workplace records are completed |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

- Unit context includes:**
- WHS requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods codes, and local safe operating procedures or equivalent
 - work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
 - work requires individuals to demonstrate some discretion, judgement and problem solving in the application of surface coatings
- Spray guns include:**
- conventional air spray guns and airless spray guns
 - high volume/low pressure (HVLP) air-assisted and airless spray guns
- Coatings include:**
- pre-catalysed lacquer
 - acid catalysed lacquer and nitro-cellulose lacquer
 - one-pot polyurethane and water-based coatings
 - stains, lacquers, polish, enamels and acrylics
- Tools and equipment include:**
- pressure feed systems
 - spray booth
 - liquid containers
 - air compressor and hoses
 - air regulator
 - positive pressure air-wash masks
 - canister-type face masks
 - screwdrivers
 - shifting spanner and spanners
- Personal protective**
- that prescribed under legislation, regulations and enterprise

equipment includes: policies and practices

Information and procedures include:

- workplace procedures relating to the use of tools and equipment
- work instructions, including job sheets, cutting lists, plans, drawings and designs
- workplace procedures relating to reporting and communication
- manufacturer specifications and operational procedures

Unit Mapping Information

Supersedes and is equivalent to LMFFF2006B Apply surface coatings by spray gun

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFF2006 Apply surface coatings by spray gun

Modification History

Release 1 - New unit of competency

Performance Evidence

- Interpret work order and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
- Select and apply surface coatings, including the adjustment of spray equipment, to effect required spray pattern for a minimum of three (3) different surface types and shapes
- Maintain spray equipment and work area, including spray booth
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Minimise wastage of resources, including materials, time and money
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- Identification of spray equipment, processes and procedures
- Characteristics of the coatings and base materials in terms of toxicity, reactivity, flammability, required viscosity and recoatability
- Effects of fumes, heat and other radiations on surface coatings
- Methods to prevent contamination of surfaces during and after surface coating
- Work flow in relation to spraying operations

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors

- have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
- be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to spray equipment, spray booth, coatings and cleaning products.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

MSFFM3009 Produce manual and computer-aided production drawings

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers producing manual and computer-aided production drawings.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Competency Field

Unit Sector

Furniture Making

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Identify object to be drawn	1.1	The purposes and any operational characteristics of object to be drawn are identified
		1.2	Production materials and method are identified
2	Establish drawing criteria and limitations	2.1	Type of drawing to be completed is identified
		2.2	Drawing requirements are established and documented identifying dimensions, angles, shapes and finished sizes
		2.3	Drawing conventions and specifications to be noted on the drawing are identified
		2.4	Appropriate medium for drawings is identified and

- selected
- | | | | |
|---|------------------------------------|-----|---|
| 3 | Quantify and draft initial drawing | 3.1 | Dimensions are plotted from criteria and documented specifications |
| | | 3.2 | Dimensional points are connected to match appropriate drawing views |
| | | 3.3 | Any production notes or special requirements are noted |
| | | 3.4 | Drawing conventions and specifications are noted on the documentation |
| 4 | Complete drawing | 4.1 | Angles, shapes and dimensions are checked against specifications and sample |
| | | 4.2 | Adjustments are made to the drawing within scope of authority |
| | | 4.3 | Drawing is checked for compliance with workplace documentation requirements |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

Scope of drawing:

- is to be limited to that used for manufacture/production purposes and is not to encompass original design concepts
- drawing is to be completed using both manual and computer-aided design (CAD) techniques and processes

Unit scope includes:

- drawings in metric scale and covering all dimensions of the furniture and furnishings

Calculations include:

- manual and with the aid of a calculator

- Unit context includes:**
- work health and safety (WHS) requirements, including legislation, building codes, material safety management systems, hazardous substances and dangerous goods codes, and local safe operating procedures
 - work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
- Personal protective equipment includes:**
- that prescribed under legislation, regulations and enterprise policies and practices
- Information and procedures include:**
- workplace procedures relating to the use of tools and equipment
 - work instructions, including job sheets, cutting lists, plans, drawings and designs
 - workplace procedures relating to reporting and communication
 - manufacturer specifications and operational procedures

Unit Mapping Information

Supersedes and is equivalent to LMFFM3011B Produce manual and computer-aided production drawings.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFM3009 Produce manual and computer-aided production drawings

Modification History

Release 1 - New unit of competency

Performance Evidence

- Identify the factors and criteria relevant to the drawings
- Apply safety requirements throughout the work sequence, including the use of personal protective clothing and equipment
- Prepare production drawings of furniture/furnishings:
 - covering a scope of at least three (3) products
 - applying both manual and computer-aided techniques and processes
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Minimise wastage of resources, including materials, time and money
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- Furniture design and planning criteria
- Structural geometry
- Measurement techniques and equipment/tools
- Theory and practice of calculations (addition, subtraction, multiplication and division)
- Types, techniques and processes of manual production drawing
- Types of computer-aided drawing equipment, software, techniques and processes
- Conventional signs and markings for drawings

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.

- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to information on the subjects for drawing, computer-aided drawing systems, measuring, calculating and recording devices.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

MSFFM3011 Measure and draw site layout for manufactured furniture products

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers measuring and recording site layout details to provide an accurate basis for both manufacture and installation of furniture products.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Competency Field

Unit Sector

Furniture Making

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | | |
|---|---------------------|-----|--|
| 1 | Obtain measurements | 1.1 | The purpose of obtaining measurements is clarified and confirmed |
| | | 1.2 | The most appropriate method of obtaining the measurement is selected and applied |
| | | 1.3 | Accurate measurements are obtained, confirmed and recorded |
| | | 1.4 | Calculations required for the measurement or validation are selected and correctly applied |
| | | 1.5 | Quality assurance requirements, standards and tolerances associated with enterprise operations are recognised and adhered to |

- | | | | |
|---|------------------|-----|---|
| 2 | Draw site layout | 2.1 | Intended use of the site is clarified and confirmed |
| | | 2.2 | A site plan is prepared showing all features and measurements |
| | | 2.3 | A site elevation is completed showing all features and measurements |
| | | 2.4 | Unique and non-complying features which may impact on manufacture and/or installation are highlighted and referred to the appropriate party |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

- | | |
|---|--|
| Unit scope includes: | <ul style="list-style-type: none">• measurement and drawing of site layout related to the manufacture and installation of furniture, cabinets, glass, soft furnishings, upholstery, picture framing and floor covering products |
| Drawing include: | <ul style="list-style-type: none">• manual or computer-aided |
| Measurements: | <ul style="list-style-type: none">• are to be in metric scale, cover all dimensions of the site and furnishings and involve the use of:<ul style="list-style-type: none">• rulers• tape measures• squares• service detectors• laser or equivalent technology |
| Critical dimensions that may impact on | <ul style="list-style-type: none">• the square of the structure• angles of floor to walls |

- manufacture and installation include:**
- walls to ceiling
 - vertical walls
 - horizontal floor and ceiling
 - service locations and critical structural criteria
- Calculations include:**
- area
 - perimeter
 - volume
 - mass
 - scales and ratios (ingredients/elements and triangulation) and require the application of addition
 - subtraction
 - multiplication and division processes
 - calculations are to be performed both manually and with the aid of a calculator
- Unit context includes:**
- work health and safety (WHS) requirements, including legislation, building codes, material safety management systems, hazardous substances and dangerous goods codes and local safe operating procedures
 - work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
- Personal protective equipment includes:**
- that prescribed under legislation, regulations and enterprise policies and practices
- Information and procedures include:**
- workplace procedures relating to the use of tools and equipment
 - work instructions, including job sheets, cutting lists, plans, drawings and designs
 - workplace procedures relating to reporting and communication
 - manufacturer specifications and operational procedures

Unit Mapping Information

Supersedes and is equivalent to LMFFM3013B Measure and draw site layout for manufactured furniture products.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFM3011 Measure and draw site layout for manufactured furniture products

Modification History

Release 1 - New unit of competency

Performance Evidence

- Identify the factors relevant to the measurements and drawings
- Communicate effectively to enable accurate calculations, measurements and drawings
- Accurately measure and record particulars for required sector sites and materials
- Draw accurate, scaled plans and elevations relevant to the site using manual or computer-aided methods
- Identify and communicate on measurements and dimensions which may impact on manufacture and/or installation
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Minimise wastage of resources, including materials, time and money

Knowledge Evidence

- Furniture design and planning criteria
- Drawing techniques, technologies and processes
- Furniture installation methods, criteria and techniques
- Measurement techniques and equipment/tools
- Theory and practice of calculations (addition, subtraction, multiplication and division)
- Conventional signs and markings for plans and drawings

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.

- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to information on the site and products for measurement and calculation, suitable work area appropriate to the activity, suitable site plans/drawings and/or specifications, and measuring, calculating and recording devices.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

MSFFM3019 Set up, operate and maintain automated edge banding machines

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers setting up, operating and maintaining edge banding machines which use automated processes to apply and finish edge treatments.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Competency Field

Unit Sector

Furniture Making

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | | |
|---|------------------|-----|--|
| 1 | Prepare for work | 1.1 | Work instructions are used to determine job requirements, including quality, materials, equipment and quantities |
| | | 1.2 | Work health and safety (WHS) requirements, including personal protection needs, are observed throughout the work |
| | | 1.3 | Material for processing is selected and inspected for quality |
| | | 1.4 | Machines and cutting tools are identified and checked for safe and effective operation |
| | | 1.5 | Procedures are determined for minimising waste material |

- 1.6 Procedures are identified for maximising energy efficiency while completing the job
- 2 Set up machines
 - 2.1 Machine settings and adjustments are made in accordance with job requirements and machine and tool manufacturer instructions
 - 2.2 Trial runs are conducted to check machine operation, accuracy and quality of finished work
 - 2.3 Necessary adjustments are made to machine settings
- 3 Operate machines
 - 3.1 Machine start-up procedure is carried out in accordance with manufacturer instructions
 - 3.2 Material is fed into machine in accordance with manufacturer instructions, tooling requirements, safe handling procedures and standard workplace operating procedures
 - 3.3 Machine is operated in accordance with its designed capacity and purpose, and to manufacturer recommendations
 - 3.4 Machine operation is monitored to ensure product quality and output
 - 3.5 Waste quantities are checked and minimised
 - 3.6 Items that do not meet quality requirements are repaired, recycled or discarded according to workplace procedures
 - 3.7 Problems with the required work and/or the operation of the machine are identified and reported to appropriate persons
- 4 Finalise operation and maintain equipment
 - 4.1 Work area is cleaned, hand and/or power tools and equipment are cleaned, maintained and stored in accordance with workplace procedures
 - 4.2 Machinery is cleaned and left in a safe mode
 - 4.3 Faulty and/or defective equipment is tagged and reported in accordance with workplace practices
 - 4.4 Unused hardware is collected and stored for re-use or disposal following workplace procedures
 - 4.5 Waste and scrap materials are dealt with following

workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

- Automated edge banding machines include:**
- standard automated edger (not fully automatic)
 - soft forming machine
- Unit scope includes:**
- applying and processing an edge trim to solid timber or manufactured board
- Unit context includes:**
- WHS requirements, including legislation, building codes, material safety management systems, hazardous substances and dangerous goods code, and local safe operating procedures
 - work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
 - work requires individuals to demonstrate some discretion, judgement and problem solving in the set up and operation of machines
 - competency may be demonstrated in workplaces involved in the manufacture of domestic furniture, commercial furniture, kitchen and bathroom cabinets and/or furniture components
- Materials to be processed include:**
- solid timber
 - manufactured board
- Edgings include:**
- solid timber
 - laminates
 - plastics

- non-ferrous materials and foils
 - the cleaning and refurbishing of the gluing station
- Operator maintenance includes:**
- that prescribed under legislation, regulations and enterprise policies and practices
- Personal protective equipment includes:**
- workplace procedures relating to the use of tools and equipment
 - work instructions, including job sheets, cutting lists, plans, drawings and designs
 - workplace procedures relating to reporting and communication
 - manufacturer specifications and operational procedures
- Information and procedures include:**

Unit Mapping Information

Supersedes and is equivalent to LMFFM3027B Set up, operate and maintain automated edge banding machines.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFM3019 Set up, operate and maintain automated edge banding machines

Modification History

Release 1 - New unit of competency

Performance Evidence

- Interpret work order and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Read and interpret cutting lists and job specifications to prepare for work
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
- Identify, set up and operate an automated (not fully automatic) edging machine to complete the following:
 - the set up and application of at least three (3) different edge treatment materials
 - the identification and correction of at least two (2) real or simulated machining faults
- Conduct operator maintenance on the machines and equipment
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Minimise wastage of resources, including materials, time and money
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- Types, characteristics, uses and limitations of machines
- Characteristics, uses and limitations of board products, edging products and adhesives
- Workplace guidelines regarding acceptable tolerance levels
- Workplace safety policies and procedures
- Procedures for reporting machinery faults and material defects

Assessment Conditions

- Assessors must:

- hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
- have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
- be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to an automated edge banding machine, standard operating procedures, and unprocessed materials.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

MSFFM3020 Fabricate synthetic solid surface products

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers fabricating synthetic solid surface furniture and furnishing products.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Competency Field

Unit Sector

Furniture Making

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | | |
|---|------------------|-----|---|
| 1 | Prepare for work | 1.1 | Work instructions are used to determine job requirements, including design, tolerances, process, materials, finish and quantity |
| | | 1.2 | Fabrication sequence is planned |
| | | 1.3 | Procedures are determined for checking quality at each stage of the process |
| | | 1.4 | Work health and safety (WHS) requirements, including personal protection needs, are observed throughout the work |
| | | 1.5 | Suitable work area is selected for the task |
| | | 1.6 | Preparatory drawings and set-outs for tasks are completed |

- 1.7 Cutting list for components is developed
- 1.8 Materials are selected following work instructions
- 1.9 Tools and equipment suitable for fabrication are identified and checked for safe and effective operation
- 2 Complete fabrication
 - 2.1 Materials are set out and prepared according to work instructions and components are marked according to industry practices
 - 2.2 Tools, machines and equipment are used in accordance with safety requirements and manufacturer specifications
 - 2.3 Components are fabricated and checked against set-outs for accuracy tolerances, fit and distortion
 - 2.4 Doors, drawers, shelves or decorative treatments are fitted as required
 - 2.5 Product is prepared for final finish, including the removal of bruises, scratches, dents and marks
 - 2.6 Product is checked against plans at identified checkpoints
- 3 Finalise operation and maintain equipment
 - 3.1 Work area is cleaned, hand and/or power tools and equipment are cleaned, maintained and stored in accordance with workplace procedures
 - 3.2 Machinery is cleaned and left in a safe mode
 - 3.3 Faulty and/or defective equipment is tagged and reported in accordance with workplace practices
 - 3.4 Unused hardware is collected and stored for re-use or disposal following workplace procedures
 - 3.5 Waste and scrap materials are dealt with following workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

Synthetic solid surface products include:

- acrylic or polyester sheet-based materials

Synthetic solid surface products include:

- benchtops
- edges
- sinks
- bowls
- other containers and waterproof wall treatments

Unit context includes:

- WHS requirements, including legislation, building codes, material safety management systems, hazardous substances and dangerous goods code, and local safe operating procedures
- work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
- work involves reading and interpreting plans, developing set-outs, using hand and/or power tools, equipment and operating machinery

Tools and equipment include:

- measuring tapes or rulers
- hammers
- mallets
- squares
- bevels
- chisels
- planes
- hand saws
- power saws
- power drills/screwdrivers
- air compressor and hoses
- clamps
- screwdrivers
- pincers

Machines include:

- panel saws
- routers

- edge moulders
 - point to point
 - heat applicators
 - sanding and buffing machines
- Materials include:**
- synthetic solid surface materials
 - timber
 - manufactured board
 - glues
 - screws
 - nails
 - dowels
 - knockdown fittings
- Personal protective equipment includes:**
- that prescribed under legislation, regulations and enterprise policies and practices
- Information and procedures include:**
- workplace procedures relating to the use of tools and equipment
 - work instructions, including job sheets, cutting lists, plans, drawings and designs
 - workplace procedures relating to reporting and communication
 - manufacturer specifications and operational procedures

Unit Mapping Information

Supersedes and is equivalent to LMFFM3028B Fabricate synthetic solid surface products.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFM3020 Fabricate synthetic solid surface products

Modification History

Release 1 - New unit of competency

Performance Evidence

- Interpret work order and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment or products
 - maintain required production output and product quality
- Fabricate a minimum of three (3) synthetic solid surface material products, including at least one (1) full benchtop
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Minimise wastage of resources, including materials, time and money
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- Types, characteristics, uses and limitations of synthetic solid surface materials
- Interpretation of plan representation of furniture design
- Preparation of drawings and set-outs
- Identification of hand and/or power tools, materials, machines, equipment, processes and procedures
- Work flow in relation to furniture production

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors

- have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
- be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to plans, hand and/or power tools, machines, equipment, materials and a work area.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

MSFFM3022 Set up, operate and maintain computer numerically controlled (CNC) machining and processing centres

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers setting up, operating and maintaining CNC machining and processing centres to produce furniture or components.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Competency Field

Unit Sector

Furniture Making

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | | |
|---|------------------|-----|--|
| 1 | Prepare for work | 1.1 | Work instructions are used to determine job requirements, including design, quality, materials, equipment and quantities |
| | | 1.2 | Work health and safety (WHS) requirements, including personal protection needs, are observed throughout the work |
| | | 1.3 | Material for machining is selected and inspected for appropriate quality |
| | | 1.4 | Procedures are determined for minimising waste material |
| | | 1.5 | Procedures are identified for maximising energy efficiency while completing the job |

- 2 Set up for machining and processing
 - 2.1 CNC program is set to job requirements
 - 2.2 Safety equipment, including emergency stops, gauges, guards and controls are checked
 - 2.3 Machining and processing settings and adjustments are made in accordance with job requirements and machining and processing and tool manufacturer instructions
 - 2.4 Machining and processing, cutting tools and jigs are checked for safe and effective operation
 - 2.5 Trial runs are conducted to check machining and processing operation and quality of finished work
 - 2.6 Final adjustments are made to CNC programs and equipment according to workplace procedures
- 3 Operate machining and processing centres
 - 3.1 Machining and processing centres are operated and monitored to ensure product quality and output
 - 3.2 Waste quantities are checked and minimised
 - 3.3 Problems with the required work are identified and reported to appropriate persons
 - 3.4 Items that do not meet quality requirements are repaired, recycled or discarded according to workplace procedures
 - 3.5 Any authorised changes in working procedures are followed
- 4 Finalise operation and maintain equipment
 - 4.1 Work area is cleaned, hand and/or power tools and equipment are cleaned, maintained and stored in accordance with workplace procedures
 - 4.2 Machinery is cleaned and left in a safe mode
 - 4.3 Faulty and/or defective equipment is tagged and reported in accordance with workplace practices
 - 4.4 Unused hardware is collected and stored for re-use or disposal following workplace procedures
 - 4.5 Waste and scrap materials are dealt with following workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

CNC machining and processing centres include

- a three axis machining centre
- multi-tasking machining centres
- flat-bed routers and mortise

Materials to be machined and processed include:

- solid timber
- manufactured board

Unit scope includes:

- reading and interpreting drawings
- selecting and installing tooling
- setting jigs and fixtures
- programming (sub-programs and parametrics)
- performance of computer-aided design (CAD)/computer-aided manufacture (CAM) functions
- downloading and storage of data to complete detailed profiling
- other specified operations

Unit context includes:

- WHS requirements, including legislation, building codes, material safety management systems, hazardous substances and dangerous goods code, and local safe operating procedures
- work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
- work requires individuals to demonstrate some discretion, judgement and problem solving in the set up and operation of machining and processing centres
- competency may be demonstrated in workplaces involved in the manufacture of solid timber furniture, domestic

- Tools and equipment include:**
- furniture, commercial furniture, kitchen and bathroom cabinets and/or furniture components
 - stand-alone or integral computing systems
 - machine-specific tools
- Personal protective equipment includes:**
- that prescribed under legislation, regulations and enterprise policies and practices
- Information and procedures include:**
- workplace procedures relating to the use of tools and equipment
 - work instructions, including job sheets, cutting lists, plans, drawings and designs
 - workplace procedures relating to reporting and communication
 - manufacturer specifications and operational procedures

Unit Mapping Information

Supersedes and is equivalent to LMFFM3031B Set up, operate and maintain CNC machining and processing centres.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFM3022 Set up, operate and maintain computer numerically controlled (CNC) machining and processing centres

Modification History

Release 1 - New unit of competency

Performance Evidence

- Locate, interpret and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection practices to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment or products
 - maintain required production output and product quality
- Identify, set up and operate CNC machining and processing centre equipment to complete detailed profiling, including:
 - development and application of sub-program
 - development and application of parametric program, and
 - application of CAD/CAM functions
- Conduct operator maintenance on the machining and processing centre equipment
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Minimise wastage of resources, including materials, time and money
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- Types, characteristics, uses and limitations of CNC machining and processing centres
- CNC theory, practices and techniques
- Characteristics of materials used and uses of products produced
- Work flow processes
- Procedures for reporting materials, product or equipment faults

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to CNC controlled equipment, standard operating procedures, unprocessed materials.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

MSFGG3036 Install commercial glazing products

Modification History

Release 1. Supersedes and is not equivalent to MSFGG3017 Fabricate and install commercial glazing.

Application

This unit describes the skills and knowledge required to identify work requirements, prepare tools and materials, and install flat and curved glazing products in commercial environments such as shopfronts, doors and windows.

This unit applies to individuals installing products. They may or may not also fabricate the products.

Licensing, legislative or certification requirements may apply to this unit and relevant state/territory and local government agencies should be consulted to determine any necessary certification or licensing for undertaking glass and glazing work. Access to construction sites requires certification of general induction training specified by the National Code of Practice for Induction for Construction Work (ASCC 2007).

Pre-requisite Unit

N/A

Unit Sector

Glass and Glazing

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify work requirements	1.1 Read work documentation and identify installation requirements 1.2 Identify and follow work health and safety requirements 1.3 Determine required installation methods and materials, and estimate quantities 1.5 Plan a logical work sequence suited to the job and workplace procedures

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
2. Prepare for installation	<p>2.1 Select and check tools and equipment for suitability, serviceability and safety prior to use</p> <p>2.2 Select and confirm type and quantity of components and materials against specifications</p> <p>2.3 Measure and prepare components and materials using required tools in accordance with specifications</p>
3. Identify site conditions and constraints	<p>3.1 Consult customer and obtain permission prior to site inspection</p> <p>3.2 Identify site safety hazards and take corrective action to reduce injury to self and others</p> <p>3.3 Identify other on-site characteristics for their impact on the installation process</p> <p>3.4 Take accurate measurements and confirm against job specification</p> <p>3.5 Apply covering material to protect existing fixtures and fittings in accordance with workplace procedures</p>
4. Prepare frame/opening and materials	<p>4.1 Remove glass in accordance with safety and work requirements</p> <p>4.2 Assess frame and/or opening to ensure suitability for re-glazing in accordance with customer requirements and Australian Standards</p> <p>4.3 Report defective frames for repair or replacement in accordance with workplace procedures</p> <p>4.4 Prepare frame and/or opening to receive glass through check of size against specifications, removal of sealant remains and surface preparation</p> <p>4.5 Prepare fixing and sealing materials by mixing or cutting to length in accordance with job requirements</p>
5. Fit glass	<p>5.1 Fix glass to the frame using the selected method and in accordance with recognised industry procedures and Australian Standards</p> <p>5.2 Use solvents and sealants in accordance with manufacturer recommendations and Australian Standards</p> <p>5.3 Remove excess sealing material and clean glass and frame after fixing</p>
6. Complete work	<p>6.1 Check completed installation for compliance with customer requirements, specifications and Australian Standards</p> <p>6.2 Clean and store tools, equipment and materials in accordance with</p>

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	workplace procedures 6.3 Clean work area, leave in a safe condition and dispose of waste or recycle in accordance with workplace protocols 6.4 Accurately complete required workplace documentation

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFGG3036 Install commercial glazing products

Modification History

Release 1. Supersedes and is not equivalent to MSFGG3017 Fabricate and install commercial glazing.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- completed 2 commercial project installations in accordance with work, safety and Australian Standards requirements, to include at least 2 of the following:
 - combined window and door project
 - frameless commercial windows
 - shopfront and door
 - shopfront and door using sub-head and sub-sill.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- Australian Standards, their purpose and key provisions:
 - AS/NZS 4667
 - AS 1288
- mathematical procedures for estimation and measurement
- types, characteristics and uses of commercial glazing products
- commercial glazing product installation:
 - workplace safety system requirements
 - work flow requirements
 - qualities and characteristics of glass and framing materials, including curved glass
 - qualities, characteristics, uses and limitations of component hardware:
 - concealed overhead closer
 - guides
 - hinges
 - locks
 - pivots
 - weather seals
 - wheels

- stays
- site characteristics that may impact installation and how to respond
- installation techniques, the types of problems that may occur and how to avoid and respond
- fabrication methods for different products and how this impacts installation
- basic fabrication techniques for on-site product adjustments
- quality assurance
- types, characteristics, safe use, maintenance and limitations of installation tools and equipment
- uses and limitations of adhesives and sealants in glazing installations
- documentation requirements for installation work.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - equipment, tools and materials to complete tasks in the Performance Evidence
 - work orders
 - workplace procedures.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

MSFID4016 Design colour schemes for interior and exterior spaces

Modification History

Release 1. Supersedes and is not equivalent to MSFID4001 Research, analyse and apply colour for interior spaces.

Application

This unit describes the skills and knowledge required to assess colour requirements, research and experiment with different colour options and create preferred colour schemes for presentation to the client.

This unit applies to interior decorators and designers.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

N/A

Unit Sector

Interior Decoration and Design

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Assess colour requirements for the project	1.1 Evaluate project specifications, parameters and constraints, and confirm with client 1.2 Select work resources based on the needs of the project 1.3 Identify and assess the space, its light and continuing colours for impact on potential solutions 1.4 Identify key project stakeholders and establish required communication protocols
2. Research colour schemes for interiors	2.1 Research and analyse colour psychology in accordance with the needs of the project

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	<p>2.2 Research and analyse cultural and historical influences on colour to inform the needs of the project</p> <p>2.3 Research and compile information on the impact of specific colours on the interior space</p>
3. Explore colour schemes	<p>3.1 Use colour wheels to mix and match alternative colour schemes to determine suitability of colours to a space</p> <p>3.2 Explore the use of additive and subtractive colour mixing to inform colour selections</p> <p>3.3 Explore and test colour systems and colour combinations and/or juxtapositions against the brief</p> <p>3.4 Assess effect of light against the impact of colours being proposed for use</p> <p>3.5 Assess visual perception of colours in accordance with the project brief</p> <p>3.6 Match samples using colour mixing techniques</p> <p>3.7 Evaluate colour effect perceptions by use of light to mix and throw coloured light onto surfaces</p> <p>3.8 Ascertain contrast and harmony of colours through selection of colours in accordance with the project brief</p>
4. Finalise and present colour scheme	<p>4.1 Choose final selection of colours based on exploration and key objectives of the project brief</p> <p>4.2 Prepare a visual representation that communicates the key aspects of the preferred solution using rendering media suited to the project</p> <p>4.3 Present recommendations in a format and level of detail suited to the client and scope of the project</p> <p>4.4 Seek client feedback on the proposed solution</p> <p>4.5 Make adjustments to the final design solution based on feedback</p> <p>4.6 Accurately document selection specifications</p>

Foundation Skills

The Foundation Skills describe those required skills (such as, language, literacy, numeracy and employment skills) that are essential to performance:

- technology skills to research colour information using digital media.

Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFID4016 Design colour schemes for interior and exterior spaces

Modification History

Release 1. Supersedes and is not equivalent to MSFID4001 Research, analyse and apply colour for interior spaces.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- developed and presented colour schemes in response to 3 different design briefs that individually or cumulatively involve both interiors and exteriors:
 - developed samples to represent colour mixing, matching, combinations and effects
 - visually presented colour schemes using rendering and other techniques to illustrate how ideas meet overall project requirements.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- research sources for information about colour, including current trends
- elements and principles of design
- design process and how ideas progress
- terminology of colour
- colour wheels and how they are used in interior decoration and design
- cultural and historical influences of colour
- colour systems and theories
- colour psychology influences
- use of colour in different types of interior spaces
- processes for additive and subtractive colour mixing
- effects of natural and artificial light on colour and finish types
- types of rendering media and how they are used.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - design briefs

- information technology for research
- colour wheels.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

PUAFER004 Respond to facility emergencies

Modification History

Release 1. This is the first release of this unit of competency in the PUA Public Safety Training Package.

Application

This unit of competency involves the skills and knowledge required by occupants to recognise emergencies in a facility, to report emergencies and to take appropriate action during facility emergency situations. It includes preparing for emergency situations, reporting emergencies, responding to emergency warnings and advice, choosing the most appropriate course of action and evacuating from a danger area.

The unit has been developed to cover the facilities as specified in Australian Standard (AS) 3745 and AS4083. For this unit, as covered by AS3745 and AS4083, occupants are people attending a facility on a permanent or temporary basis such as an employee, contractor, student, resident but not a visitor or patient and a facility is a building, structure or workplace that is, or may be, occupied by people (occupants).

All aspects of the unit must be undertaken in accordance with legislative requirements, organisational policies and procedures and accepted safe practices. It applies to occupants who are required to be 'emergency aware' in their facility.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable

Competency Field

Facility Emergency Response

Unit Sector

Public Safety

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

1 Prepare for emergency situations

- 1.1 Facility emergency procedures to be used by occupants are identified and followed
- 1.2 Emergency resources in a facility are identified and located
- 1.3 Emergency response exercises are participated in, in accordance with facility emergency procedures

2 Report emergencies

- 2.1 Emergencies are identified and reported, in accordance with facility emergency procedures
- 2.2 Occupants in any immediate danger from an emergency or potential emergency are alerted, in accordance with facility emergency procedures

3 Respond to emergency warnings and advice

- 3.1 Emergency warnings and advice are responded to, in accordance with facility emergency procedures
- 3.2 Instructions from emergency control organisation or attending emergency services are complied with during an emergency

4 Choose most appropriate course of action

- 4.1 Emergencies that require evacuation are determined
- 4.2 Emergencies that require occupants to shelter-in-place (no evacuation) are determined
- 4.3 Shelter or refuge is assessed to determine suitability and sustainability when a shelter-in-place response is the preferred option
- 4.4 Emergencies that require lockdown are determined
- 4.5 Appropriate cover is assessed when lockdown is required

5 Evacuate from danger area

- 5.1 Need to evacuate from danger area is determined and issued under facility emergency procedures
- 5.2 Work area is prepared for evacuation, in accordance with facility emergency procedures
- 5.3 Area of danger is evacuated, in accordance with facility emergency procedures
- 5.4 Where it is safe to do so, assistance is provided to

occupants who may require it

- 5.5 Evacuation procedures and instructions from emergency control organisation or emergency response personnel are followed
- 5.6 Alternative pathways or methods of evacuation are identified, assessed and chosen, in accordance with facility emergency procedures, if usual means of evacuation are blocked or occupants are endangered
- 5.7 Communication system is used to respond to facility emergencies, in accordance with facility procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to PUAWER004B Respond to facility emergencies.

Links

PUA Training Package Companion Volume Implementation Guide is found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=3eca5672-6d5a-410b-8942-810d0ba05bbf>

Assessment Requirements for PUAFER004 Respond to facility emergencies

Modification History

Release 1. This is the first release of this unit of competency in the PUA Public Safety Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and includes

- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements
- complying with legislation, industry standards, codes of practice and regulations
- evacuating from work area
- following facility emergency procedures and direction of emergency control organisation members and/or attending emergency services
- identifying and evacuating occupants who may require assistance
- identifying and reporting emergencies
- maintaining own safety and the safety of others in emergency situations
- participating in emergency response exercises including briefings, debriefings, simulations, reviews and desk top drills
- preparing for emergency situations
- responding to emergency warnings and advice
- selecting the most appropriate course of action during an emergency

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and includes knowledge of

- circumstances where evacuation may need to be modified
- emergency response exercises including participation in briefings and debriefings
- evacuation alarms and facility emergency procedures including action to take when evacuation to a location external to the building might expose evacuated occupants and/or personnel to a greater level of danger
- facility emergency documentation, policies and procedures
- facility emergency reporting systems and procedures facility emergency warning system, signals and instructions
- legislation, industry standards, codes of practice and regulations
- locations of assembly areas and post evacuation actions

- locations of emergency equipment in a facility
- roles, responsibilities and authority of emergency personnel, emergency control organisations and emergency response teams
- types of emergencies, hazards and evacuation actions associated with each one
- types of occupants who may require assistance
- where Personal Emergency Evacuations Plans (PEEPs) for occupants who have a disability are kept
- Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in industry approved simulated workplace operational situations that reflect workplace conditions.

Resources for assessment must include access to

- a range of relevant exercises, case studies and/or simulations
 - that reflect emergency situations that may occur in a facility and include shelter in place, partial evacuation and/or full evacuation
- relevant and appropriate materials, equipment, tools and personal protective clothing and equipment currently used in industry
- applicable documentation including organisational policies, facility emergency plan, facility emergency response procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

PUA Training Package Companion Volume Implementation Guide is found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=3eca5672-6d5a-410b-8942-810d0ba05bbf>

PUAFIR518 Conduct and record a Bushfire Attack Level (BAL) assessment

Modification History

Release 1. This is the first release of this unit of competency in the PUA Public Safety Training Package.

Application

This unit of competency covers the skills and knowledge to perform Bushfire Attack Level (BAL) assessments.

Individuals undertaking Bushfire Attack Level assessments require a theoretical knowledge of fire, an understanding of regulatory frameworks, an ability to assess a location and consult with clients on the benefits of achieving fire resistance. It includes analysing the cause and effect of bushfire attack and correlating information about site conditions and determining the Bushfire Attack Level for a site.

The unit is applicable to personnel who are responsible for conducting a Bushfire Attack Level assessment as described in industry standards related to the construction of buildings in bushfire prone areas.

The fire sector is those sections of government departments, statutory authorities or organisations that have responsibility under jurisdictional arrangements for the delivery of firefighting and fire management services.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions.

Pre-requisite Unit

Not applicable.

Competency Field

Fire

Unit Sector

Fire

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Analyse cause and effect of bushfire attack on buildings

- 1.1 Objectives of planning and building legislation and standards covering development in areas exposed to bushfire are reviewed to identify measures to improve performance of buildings when subject to bush fire attack
- 1.2 Requirements for Bushfire Attack Level (BAL) assessment are identified and complied with including Work, Health and Safety (WHS)/Occupational Health and Safety (OHS), legislative, organisational and certification requirements
- 1.3 Interaction between fuel, topography and weather is assessed for the site and potential bushfire behaviour and its impact on people and property is determined
- 1.4 Potential fire impact on buildings including construction durability and immediate environment is determined
- 1.5 Sources of combustion are identified to determine how they influence the BAL

2 Correlate information about site conditions

- 2.1 The location of the site being assessed is identified
- 2.2 Fire Danger Index (FDI) and/or wind speed is determined for the site
- 2.3 Vegetation classification, type and height is determined for the site
- 2.4 Distance from vegetation to building sites is measured, in accordance with organisational procedures
- 2.5 Slope of land under vegetation is measured, in accordance with organisational procedures

3 Determine BAL for site

- 3.1 Relevant FDI, vegetation classification and type, distance to vegetation and slope are used to determine BALs applicable to the site

- 3.2** BALs appropriate to the site are verified, in accordance with organisational procedures
- 3.3** Details of BAL assessment is documented and reported, in accordance with organisational procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

legislation and standards must include all the following

- AS 3959 Construction of Buildings in Bushfire Prone Areas (or successor)
- NASH Standard - Steel Frame Construction in Bushfire Areas (National Association of Steel Framed Housing)
- National Construction Code (Building Code of Australia)
- planning requirements and relevant state and territory legislation

buildings must include the following

- alterations and additions to existing buildings
- new buildings

Fire Danger Index (FDI) must include one or more of the following

- forest fire and grassland fire danger indexes
- organisational and jurisdiction specific requirements for their use

vegetation type must include one or more of the following

- as defined in AS3959 Construction of Buildings in Bushfire Prone Areas (or successor)
- as specified in organisational and jurisdictional guides

Unit Mapping Information

New unit, no equivalent unit.

Links

PUA Training Package Companion Volume Implementation Guide is found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=3eca5672-6d5a-410b-8942-810d0ba05bbf>

Assessment Requirements for PUA FIR518 Conduct and record a Bushfire Attack Level (BAL) assessment

Modification History

Release 1. This is the first release of this unit of competency in the PUA Public Safety Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions on at least one occasion and includes

- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations and guidelines including safe work practices and procedures
- complying with legislation, regulations, industry standards and codes of practice for undertaking a Bushfire Attack Level (BAL) assessment
- collecting information and determining BAL assessment
- explaining purpose and processes associated with undertaking a BAL assessment to site owners including identifying problems and demonstrating potential responses
- identifying bushfire behaviour and conditions
- maintaining organisational documentation including recording, reporting and maintaining organisational information accurately
- using organisational policies and procedures relevant to undertaking a BAL assessment

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions and includes knowledge of

- bushfire behaviour concepts relevant to bushfire attack level assessments including
 - bushfire attack mechanisms including embers, radiant heat and flame contact
 - ember production and transport
 - heat transfer - convection, radiation and conduction
- bushfire behaviour concepts relevant to how bushfires move across different landscapes and vegetation including
 - fire development, growth and scale
 - flame height, fire intensity and rate of spread
 - junction zones and spotting
- Commonwealth, state or territory statutory requirements including licensing, and certification requirements

- communication methods and techniques
- fire weather conditions and impacts on fire behaviour including atmospheric stability, humidity, temperature, wind speed and direction and fire danger indices
- fuel and its impact on fire behaviour including amount, arrangement and moisture status
- organisational policies and procedures for undertaking a BAL assessment including procedures for recording, reporting and maintaining organisational records and information
- process for slope assessment and determination of effective slope
- site constraints and limitations
- sources of combustion including
 - flammable elements and vulnerable features in and around site
 - structures and other sources adjacent to or at proposed site
- vegetation type and classification including forest, woodland, shrubland, scrub, Mallee and/or Mulga, rainforest, grassland, tussock moorland and exclusions
- Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements including guidelines and practices for undertaking BAL assessments

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in industry approved simulated workplace operational situations that reflect workplace conditions.

Students must determine the level of bush fire attack by undertaking a minimum of four calculated Bushfire Attack Level (BAL) assessments in a variety of vegetation types and locations.

Resources for assessment must include access to

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, equipment, tools and personal protective clothing and equipment currently used in industry including
 - AS3959 Construction of buildings in bushfire prone areas (or successor)
 - range of appropriate sites
 - specifications and work instructions
- applicable documentation including organisational procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

PUA Training Package Companion Volume Implementation Guide is found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=3eca5672-6d5a-410b-8942-810d0ba05bbf>

RIICCM210E Install trench support

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to install trench support in civil construction, including both installing and removing trench shoring.

It applies to those working in operational roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take some responsibility for the quality of work outcomes.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Civil construction.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for installing trench support	1.1 Obtain interpret and confirm work requirements 1.2 Access, interpret and apply documentation required to install trench support 1.3 Obtain and interpret emergency procedures and identify steps required to respond to emergencies 1.4 Select and wear personal protective equipment according to site requirements 1.5 Confirm and identify requirements for complying with environmental protection, safety and traffic management signage requirements 1.6 Identify, address and report environmental issues, potential hazards

ELEMENT	PERFORMANCE CRITERIA
	and risks 1.7 Select plant, tools and equipment required to carry out tasks and check for faults 1.8 Identify, confirm, and locate materials required for work application
2. Install trench shoring	2.1 Communicate with plant operator and confirm excavation of trenches complies with site plan, line and depth 2.2 Determine and prepare shoring method according to job requirements 2.3 Set out positioning of shoring according to job requirements 2.4 Position or erect shoring within the trench according to job requirements 2.5 Secure shoring in position according to structural conformity requirements 2.6 Clean out excavation according to site requirements 2.7 Locate ladders for safe access and egress
3. Remove trench shoring	3.1 Release jacking mechanisms and remove ladders 3.2 Check shoring and prepare it for lifting from the trench 3.3 Remove shoring from trench and store it according to site requirements
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials according to site requirements 4.2 Clean and maintain condition of equipment, confirm suitability for use, and address and report issues as required within scope of own role 4.3 Manage and report hazards, and maintain a safe working environment 4.4 Process records according to site requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Self-management	<ul style="list-style-type: none"> Monitors and minimises own exposure to worksite risks and hazards during work activities

Unit Mapping Information

Supersedes and is equivalent to RIICCM210D Install trench support.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICCM210E Install trench support

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- install trench support on at least two occasions, including:
 - in trenches deeper than 1.5 metres requiring the trench support to be installed, moved along or within the trench, and removed from the trench.

During the above, the candidate must:

- locate and apply required legislation, documentation, policies and procedures
- identify, report and record hazards and risks
- implement the requirements, procedures and techniques for trench support installation including:
 - selecting and using required tools and equipment
 - using shoring methods and systems
 - working in confined spaces
- work with others to install trench support that meet required outcomes, including:
 - communicating with others to receive and confirm work requirements
 - using communication techniques and equipment to convey information to others including signage to advise others of work activity and exclusion zones
 - complying with reporting requirements and procedures.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislation required to install trench support
- policies, procedures and documentation required to install trench support, including those relating to:

- hazard and risk management
- work health and safety
- working in confined spaces
- emergency response
- site and equipment safety
- environmental protection waste management
- communication techniques and equipment
- workplace recording and reporting
- site isolation and traffic control responsibilities
- operational, maintenance and basic diagnostic procedures
- project quality requirements
- job plans and specifications
- housekeeping activities, including:
 - cleaning up work area
 - cleaning and maintaining condition of equipment
 - waste management
 - processing records
- principles and techniques required to install trench support, including those related to:
 - organising work activities
 - excavation of:
 - trenches
 - wells
 - pits
 - construction
 - shoring methods
 - erecting shoring, including:
 - using trench shoring mechanisms
 - using shoring securing mechanisms
- types, characteristics, technical capabilities and limitations of plant and equipment required to install trench support, including:
 - shoring systems
 - levelling equipment
 - hand and power tools
 - measuring equipment
 - scaffolding
 - elevated work platforms
 - slings
- materials safety data sheet (SDS) compliance processes
- components of job safety analyses (JSAs), job safety environmental analyses (JSEAs), and safe work method statements (SWMs)

- civil construction terminology related to installing trench support.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to install trench support
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

- **Assessor requirements**

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume Implementation Guide is found on VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIICTT306E Install cure in-place linings for existing pipeline systems

Modification History

This unit replaces RIICTT306D Install cure in-place linings for existing pipeline systems. Minor endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Application

This unit develops the skills and knowledge required to install cure in-place linings for existing pipeline systems in civil construction.

It applies to those working in operational roles. They generally work under supervision and hold some responsibility over installing cure in-place linings for existing pipeline systems.

No licensing, legislation or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

ELEMENT <i>Elements describe the essential outcomes.</i>	PERFORMANCE CRITERIA <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to install cure in-place linings for existing pipeline systems	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply documentation required for installing cure in-place linings for existing pipeline systems and confirm work activity is compliant 1.3 Identify environmental issues and potential hazards, and assess and address risks within scope of own role and according to workplace procedures 1.4 Select and wear personal protective equipment required for work activities 1.5 Complete induction procedures as required by workplace policies and procedures and job role requirements

ELEMENT	PERFORMANCE CRITERIA
	<p>1.6 Identify, obtain and implement signage requirements from the project traffic management plan</p> <p>1.7 Identify and select plant, tools and equipment, check for serviceability and rectify and report any faults as required</p>
2. Perform site survey	<p>2.1 Notify and obtain approval from property owners and occupiers for entry onto their property</p> <p>2.2 Determine site conditions by visual inspection, plans, discussion with land owners and information from service utilities</p> <p>2.3 Located underground utilities according to job requirements and workplace procedures</p> <p>2.4 Record existing site conditions according to job requirements and workplace procedures</p>
3. Initiate rehabilitation work	<p>3.1 Prepare entry and exit pits where specified</p> <p>3.2 Identify, interpret and apply required confined space entry procedures</p> <p>3.3 Monitor process and confirm conformity to design requirements</p> <p>3.4 Maintain system serviceability during rehabilitation works</p>
4. Complete cure in-place lining	<p>4.1 Determine fault with the aid of plans, drawings, CCTV recordings and other mechanisms as required</p> <p>4.2 Select resin impregnated liners required for fault</p> <p>4.3 Apply pressure cleaning to the designated location</p> <p>4.4 Install cure in-place lining material as required</p> <p>4.5 Conduct curing process according to work requirements</p> <p>4.6 Secure and seal termination at ends of process</p> <p>4.7 Open junctions for inspection and operation</p> <p>4.8 Monitor installation process and confirm finished product conforms to design requirements</p>
5. Clean up	<p>5.1 Clear work area and dispose of, reuse and recycle materials as required</p> <p>5.2 Clean, check, perform maintenance on and store plant, tools and equipment and report issues as required or address within scope of own role</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none">Identifies and interprets information from at times complex workplace procedures, documentation, legislation and regulations
Writing	<ul style="list-style-type: none">Records simple and routine information relating to work activities

Unit Mapping Information

Supersedes and is equivalent to RIICTT306D Install cure in-place linings for existing pipeline systems.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICTT306E Install cure in-place linings for existing pipeline systems

Modification History

This unit replaces RIICTT306D Install cure in-place linings for existing pipeline systems. Minor endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- install cure in-place linings for existing pipeline systems on at least two occasions including at least two cure in-place linings for existing pipeline systems.

During the above, the candidate must:

- locate, apply and retain on site access to documentation, policies and procedures required for installing cure in-place linings for existing pipeline systems
- implement the requirements, procedures and techniques for installing cure in-place linings for existing pipeline systems, including
 - determining site conditions and locating underground utilities
 - determining pipeline faults and required repair and sealing method
 - complete housekeeping activities
- work with others to install cure in-place linings for existing pipeline systems that meets all of the required outcomes, including:
 - using a range of communication techniques and equipment to convey information to others
 - maintaining written and verbal reporting requirements and procedures
 - organising work activities to meet all task requirements
- identify, obtain, confirm and apply work, safety and signage instructions and requirements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- civil construction terminology relevant for installing cure in-place linings for existing pipeline systems
- safety data sheets and materials handling methods
- pipeline systems relevant to trenchless technology

- engineering drawings, plans and specifications required for installing cure in-place linings for existing pipeline systems
- key risks relating to installing cure in-place linings for existing pipeline systems, including those associated with:
 - traffic
 - live electrical services
 - confined spaces
 - falls
 - locating near other works in progress
 - manual handling
 - gas
- key policies and procedures, legislation and established requirements for installing cure in-place pipeline systems, including those for:
 - workplace health and safety
 - confined space entry
 - operating and maintaining equipment
 - project quality management
 - site isolation and traffic control responsibilities
 - site condition assessments
 - locating underground utilities
 - waste disposal and recycling
- key factors affecting work activities described in performance evidence above, including:
 - laser control equipment techniques
 - fault types
 - manual handling techniques
 - equipment and liner types, characteristics, technical capabilities and limitations
 - remote units
 - working in a road reserve
 - cure in-place lining installation methods
 - pressure cleaning methods.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - equipment required to install cure in-place linings for existing pipelines
 - personal protective equipment
- be conducted in a safe environment; and,
- be assessed in context of this sector's work environment; and,

- be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.
- Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sectors workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor Requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory competency standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/AQTF mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements.

This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing a high level of RII training product knowledge
- having an understanding and knowledge of legislations and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.
- It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must hold the relevant vocational competencies and have current industry skills directly relevant to the training and assessment being provided and must work alongside a trainer and/or assessor to conduct the assessment. This means the industry subject matter expert should hold the unit being assessed (or an equivalent unit), and must also demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF** Level	Required assessor or industry subject matter expert experience
Drilling, Metalliferous	1	1 Year

Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this unit of competency is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIICWD503E Prepare traffic management plans and traffic guidance schemes

Modification History

This unit replaces RIICWD503D Prepare work zone traffic management plan. Significant endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Application

This unit describes the skills and knowledge required to perform a preliminary risk assessment of a temporary traffic management site and select, modify and design traffic management plans and traffic guidance schemes in civil construction.

It applies to those working in management roles. They generally work in teams and have some responsibility for the outcomes of others.

No licensing, legislation or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1.Establish context for traffic management plan and traffic guidance scheme	1.1 Determine worksite requirements and document context of traffic management plan 1.2 Identify characteristics, constraints and hazards that apply to the worksite 1.3 Complete risk assessment of proposed worksite 1.4 Establish and document the scope and objectives of traffic management plan

2.Prepare traffic management plan	<p>2.1 Monitor and coordinate the progress of personnel involved in the preparation process</p> <p>2.2 Prepare and implement traffic management plan communications strategy for internal and external audiences</p> <p>2.3 Prepare a cost estimate for executing traffic management plan</p> <p>2.4 Document and assemble traffic management plan</p> <p>2.5 Gain plan approval from required authorities</p> <p>2.6 Confirm preparation records are filed according to workplace policies and procedures</p> <p>2.7 Participate in performance review of the preparation process</p>
3. Prepare traffic guidance scheme	<p>3.1 Determine whether to select, modify or design required traffic guidance scheme</p> <p>3.2 Select, modify and develop traffic guidance scheme as required</p>
4.Support and review traffic management plan implementation	<p>4.1 Provide clarification and advice to personnel implementing the traffic management plan as required</p> <p>4.2 Review traffic management plan implementation and recommend changes as required</p> <p>4.3 Contribute to traffic management plan validation process as required</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Oral communication	<ul style="list-style-type: none"> • Presents information and provides assistance using industry specific vocabulary • Uses listening and questioning to clarify and confirm understanding
Reading	<ul style="list-style-type: none"> • Identifies and interprets information from workplace procedures, documentation, legislation and regulations
Writing	<ul style="list-style-type: none"> • Produces and completes workplace reports, including risk management matrices, using appropriate vocabulary, grammatical structures and conventions

Unit Mapping Information

Supersedes and is equivalent to RIICWD503D Prepare work zone traffic management plan.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICWD503E Prepare traffic management plans and traffic guidance schemes

Modification History

This unit replaces RIICWD503D Prepare work zone traffic management plan. Significant endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- prepare a work zone traffic management plan and traffic guidance scheme in a manner that is safe and follows workplace policies and procedures on at least two occasions, including:
 - inspecting and identifying hazards and constraints in the work zone in which the traffic management plan will apply
 - carrying out risk assessments
 - interpreting and analysing data
 - calculating flow rates, level of service, capacities and percentages
 - determining traffic management plan capacity requirements
 - documenting scope and authorities to modify the plan during implementation.

During the above, the candidate must:

- locate and apply required legislation, documentation, policies and procedures
- access and interpret required:
 - plans, drawings, specifications and traffic management plan briefs
 - engineering survey information
 - hydrological, meteorological, cultural and heritage data
 - traffic analysis data
- select and apply required traffic management plan implementation techniques
- apply engineering graphical presentation techniques
- work with required personnel to undertake and complete the work zone traffic management plan including:
 - complying with written and verbal reporting requirements and procedures
 - communicating with others to receive and clarify work instructions and coordinate work activities.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- required legislative, workplace and site policies and procedures and required Australian and international standards for:
 - temporary traffic management
 - risk assessment and management
 - statutory compliance
 - work health and safety
 - environmental management
 - cultural and heritage management
 - quality management
 - plan approvals and reviews
 - performance reviews
 - documentation, recording and reporting
- principles of road user behaviour
- principles of traffic management plans and traffic guidance schemes, including:
 - workplace design options
 - techniques for evaluating and selecting preferred options
 - signs, devices and equipment types,
 - characteristics, technical capabilities and limitations
 - geometrics
 - potential traffic hazards, constraints and conditions
- workplace techniques for implementing traffic management plans and traffic guidance schemes, including:
 - operational techniques
 - basic public communications strategies
 - industry and workplace design
 - implementation structures and capabilities
 - team leadership techniques
 - problem solving techniques
 - cost estimation techniques.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - traffic management plan
 - traffic guidance scheme
- be conducted in a safe environment; and,

- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor Requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying)	1	1 year
	2	2 years

and Civil Infrastructure		
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIHAN208E Perform dogging

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to perform dogging, including planning for dogging, preparing dogging equipment and moving loads.

It applies to those working in site-based roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take some responsibility for the quality of work outcomes.

The work required in this unit relates to the National Standard for High Risk Work but this unit does not provide the licence. Licensing, legislative and certification requirements that apply to this unit can vary between states, territories and industry sectors. Users must check requirements with relevant body before applying the unit.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for dogging	1.1 Obtain, interpret and confirm work requirements and safety information 1.2 Access, interpret and apply documentation required to perform dogging 1.3 Select and wear personal protective equipment appropriate for work activities 1.4 Develop preliminary dogging plan and site sketch according to job and site requirements 1.5 Check and confirm job feasibility and schedule with load designer and personnel involved in lifting operations. 1.6 Confirm hazards associated with load moving equipment and identify and review measures to eliminate or control hazards according to site requirements 1.7 Finalise and confirm dogging plan according to job and site

ELEMENT	PERFORMANCE CRITERIA
	requirements 1.8 Identify and implement signage and/or barricading according to site requirements
2. Prepare dogging equipment	2.1 Identify, select, inspect, and verify as serviceable dogging equipment, materials and tools required for lifting plan 2.2 Label for repair or disposal unserviceable equipment, materials and tools according to site requirements 2.3 Communicate job sequencing schedule with team within scope of own role 2.4 Calculate load mass and centre of gravity according to manufacturer specifications and site requirements 2.5 Calculate load in slings and equipment according to job requirements
3. Move loads	3.1 Perform load moving according to lifting plan, manufacturer specifications and site requirements 3.2 Perform work at heights in uncompleted structures and/or in confined and enclosed spaces according to legislative and site requirements and manufacturer specifications 3.3 Connect lifting gear to load according to manufacturer specifications and site requirements 3.4 Connect load to movement device using appropriate and certified equipment according to manufacturer specifications and site requirements 3.5 Confirm stability of load by applying load movement, temporary bracing and/or load support procedures according to manufacturer specifications and site requirements 3.6 Direct load to landing position using communication compliant with Australian standards and site procedures
4. Clean up	4.1 Dismantle and inspect load shifting equipment according to manufacturer specifications and site requirements 4.2 Clear work area according to site requirements 4.3 Check, clean, maintain and store tools and equipment according to manufacturer specifications and site requirements 4.4 Apply work completion procedures and notify relevant personnel according to site requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	<ul style="list-style-type: none">• Calculates basic measurements including mass and dimensions
Reading	<ul style="list-style-type: none">• Identifies and interprets information from workplace documentation and legislation
Self-management	<ul style="list-style-type: none">• Monitors and minimises own exposure to worksite risks and hazards during activities

Unit Mapping Information

Supersedes and is equivalent to RIIHAN208D Perform dogging.

Links

Companion Volume implementation guides is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIHAN208E Perform dogging

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- perform dogging on at least two occasions, including:
 - developing preliminary dogging plan, detailing the following points:
 - confirmed details of dogging requirements
 - confirmed dimensions and mass
 - site access and egress
 - suitability and availability of materials
 - tools and equipment
 - identification of potential hazards
 - probable control measures
 - identification of site coordination requirements
 - scheduling resources required for planned lift
 - calculating safe working loads and centre of gravity, including using load charts and sling tags/charts
 - selecting and conducting pre- and post-operational inspections on equipment, including:
 - lifting equipment
 - personal protective equipment
 - communication equipment
 - moving loads in conjunction with crane/hoist including demonstrating the following for loads of varying weights, sizes and shapes:
 - slinging load
 - loading
 - using portable lifting equipment, including blocks and lever hoists
 - lateral load movements or drifting load using multiple lifting devices
 - directing crane/hoist operator in movement of load when load is out of view of crane/hoist operator

- directing crane/hoist operator in movement of load when load is in view of crane/hoist operator
- directing crane/hoist operator in landing load when load is out of the view of crane/hoist operator
- directing crane/hoist operator in landing load when load is in view of crane/hoist operator.

During the above the candidate must:

- locate and apply relevant documentation, policies and procedures and confirm work activity is compliant
- implement requirements, procedures and techniques for performing dogging through:
 - reading work load limit tags
 - using ropes as tag lines
 - using ropes to connect to loads using each of the following knot types:
 - clove hitch
 - rolling hitch
 - single sheet bend
 - bowline
 - calculating mass, dimensions and centre of gravity of load and assessing for lifting requirements
 - identified and using lifting/slinging points on load
 - clearing work area of materials by disposing, reusing or recycling on completion of work activity
- work effectively with others to perform dogging that meets all of the required outcomes through:
 - communicating hazards and determining elimination or control of hazards
 - communicating lifting sequence with others
 - reporting work completion to relevant personnel.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key legislation required to conduct lifting operations, including those relating to:
 - working at heights
- key policies, procedures and documentation required to conduct lifting operations, including:
 - Australian standards and code of practice relating to dogging
 - National Standard for High Risk Work for dogging
 - national certification standards relating to dogging
 - operational and maintenance procedures

- site and equipment safety requirements
- principles and techniques for developing preliminary dogging plan, including:
 - confirmed details of dogging requirements
 - confirmed dimensions and mass
 - site access and egress
 - suitability and availability of materials
 - tools and equipment
 - identification of potential hazards
 - probable control measures
 - identification of site coordination requirements
- signalling methods and communications techniques relating to dogging
- types, characteristics, technical capabilities and limitations of equipment required for dogging, including designs and functions of lifting equipment
- principles and techniques for identifying and responding to relevant hazards and emergencies, including those relating to cranes and load moving equipment
- basic techniques for communicating job activities with others.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to perform dogging
 - relevant documentation
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed where infrastructure is available to facilitate lateral load movement using multiple lifting devices; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIHAN209E Perform basic rigging

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 3.0.

Application

This unit describes the skills and knowledge required to perform basic rigging, including planning for rigging, preparing rigging equipment and moving loads.

This unit applies to those working in site-based roles.

The work required in this unit relates to the National Standard for High Risk Work but this unit does not provide the licence. Licensing, legislative, regulatory or certification requirements that may apply to this unit can vary between states, territories and industry sectors, and must be sourced from relevant state jurisdictions prior to applying this unit.

Unit Sector

Coal mining

Drilling

Extractive

Metalliferous mining

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan basic rigging operations	1.1 Access, interpret and apply rigging documentation to ensure the work activity is compliant 1.2 Obtain, interpret, clarify and confirm work requirements 1.3 Write preliminary rigging plan and site sketch considering information essential to perform work activity

	<p>1.4 Confirm job feasibility and schedule work activity with the client, the load designer, and other relevant persons to perform the work activity</p> <p>1.5 Identify hazards associated with the use of load moving equipment and review measures to eliminate or control these hazards with appropriate parties and in line with standard operating procedures</p> <p>1.6 Calculate and confirm safe working loads and centre gravity using load charts and standard calculation rules prior to load moving</p> <p>1.7 Finalise and confirm rigging plan, including the scheduling of required resources</p> <p>1.8 Check safety requirements for rigging operations are in accordance with safety plans and policies</p> <p>1.9 Select and wear personal protective equipment required for work activities</p> <p>1.10 Identify and display signage, and erect barricades to isolate the work area in line with workplace procedures</p>
2. Prepare rigging equipment	<p>2.1 Select and inspect resources, materials and rigging equipment to perform work activity in line with job specifications and applicable Australian standards</p> <p>2.2 Confirm lifting equipment is appropriate and safe to perform work activity according to manufacturer's guidelines, engineering specifications and organisational policies and procedures</p> <p>2.3 Label and dispose of lifting equipment identified as inconsistent with manufacturer's guidelines, engineering specifications and organisational policies and procedures</p> <p>2.4 Prepare loads and slings, ensuring protection of the load and associated equipment</p> <p>2.5 Secure whole or part loads to prevent uncontrolled movement</p> <p>2.6 Attach and position slings, or parts of slings, to the load, ensuring safe movement and attach slings, or parts of slings, to hook while the hoist wire is vertical in line with safe work practices</p> <p>2.7 Attach tag lines to the load where specified within work requirements, and according to workplace procedures</p> <p>2.8 Confirm lifting gear is attached to load to Australian standards, manufacturer's guidelines, engineering specifications and organisational policies and procedures</p> <p>2.9 Perform test lifts, ensuring stable and secure movement of loads</p>
3. Move loads using basic rigging techniques and relevant	<p>3.1 Connect lifting gear to load to Australian standards, manufacturer's guidelines, engineering specifications and organisational policies and procedures</p>

equipment to complete work activity	<p>3.2 Connect load to movement device using appropriate and certified equipment</p> <p>3.3 Stabilise loads by application of load movement procedures, temporary bracing and/or by installing or erecting load support appropriate to the work activity</p> <p>3.4 Coordinate and communicate planned activities, including using load moving signals according to workplace procedures</p> <p>3.5 Move loads in line with work activity, workplace procedures and working safely at heights as appropriate to the work environment</p> <p>3.6 Place and secure loads in line with load designer specifications to complete work activity</p> <p>3.7 Dismantle and remove or restore load shifting equipment in a manner that complies with safe work practices</p>
4. Conduct housekeeping activities	<p>4.1 Clean, check, maintain and store plant, tools and equipment according to workplace procedures</p> <p>4.2 Clear work area and dispose of or recycle materials according to workplace procedures</p> <p>4.3 Notify appropriate personnel of work completion</p> <p>4.4 Complete and file documentation and distribute according to workplace requirements</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Identifies and interprets relevant information from workplace procedures, documentation, legislation and regulations
Numeracy	<ul style="list-style-type: none"> Identifies and comprehends relevant mathematical information in required to determine equipment operating capacities

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
RIIHAN209E Conduct basic rigging operations (Release 1)	RIIHAN209D Perform basic rigging (Release 3)	Minor updates to all sections to reflect operator's role.	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIHAN209E Perform basic rigging

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 3.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements and performance criteria of this unit.

The candidate must demonstrate completion of basic rigging operations that safely, effectively and efficiently follow workplace procedures to carry out work activity on at least two occasions. This includes:

- writing a preliminary rigging plan which must include all of the following points in detail:
 - details of rigging requirements
 - dimensions
 - site access and egress
 - suitability and availability of materials
 - tools and equipment
 - identification of potential hazards
 - control measures
 - identification of site coordination requirements
- selecting and conducting pre- and post- operational inspection of equipment including:
 - plant
 - safety harnesses
 - fall arrest systems
 - communication equipment
- installing and maintaining the following:
 - static lines and safety nets
 - perimeter safety screens and shutters
- erecting the following:
 - material hoists
 - mast climbing personnel platforms
- performing mathematical calculations for estimation and measurement of loads
- using rope to attach tag lines using knots, bend and hitches including:

- sheet bend
- becket hitch
- running bowline knot
- double bowline knot
- using ropes for splices and whipping techniques including:
 - back splice
 - eye splice
 - short splice
 - common whipping
 - sailmakers whipping
 - west country whipping
- moving and relocating plant and equipment including:
 - slinging
 - loading
 - directing
 - moving
 - unloading.

In the course of the above work the candidate must also:

- locate and apply required documentation, policies and procedures
- apply safe work practices and identify and report potential hazards and environmental issues, and assess risks
- select and wear personal protective equipment required for work activities
- erect, dismantle, level, or plumb associated plant and structures to ensure stability
- meet written and verbal reporting requirements and procedures associated with performing basic rigging operations
- check and verify work activity with client, load designer and other relevant personnel,
- provide end of work handover to relevant personnel
- dispose or recycle materials.
-

Knowledge Evidence

The candidate must demonstrate the following knowledge to effectively complete the tasks outlined in the elements and performance criteria of this unit.

Key policies, procedures and relevant standards for vehicle loading cranes, described in the performance evidence above, including those relating to:

- National Standard for high risk work
- site and equipment safety
- Safe Working Load (SWL) and Working Load Limit (WLL)
- role, responsibilities and legislation relating to a dogman
- operation and maintenance of equipment

- materials handling, storage and environmentally friendly waste management.

Key features associated with equipment performance, including:

- equipment and manufacturer guidelines, and engineering specifications
- technical capabilities and limitations.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below.

The assessment must:

- include access to:
 - rigging tools and equipment
 - load to be shifted
 - personal protective equipment
- be conducted in a safe environment
- be assessed in context of this sector's work environment
- be assessed in compliance with relevant legislation and regulations and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/AQTF mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements.

This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing a high level of RII training product knowledge
- understanding and knowledge of legislation and regulation relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and

- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together. and for the industry expert to be involved in the assessment judgement. The industry expert must hold the relevant vocational competencies and have current industry skills directly relevant to the training and assessment being provided, and must work alongside a trainer and/or assessor to conduct the assessment. This means the **industry subject matter expert should hold the unit being assessed (or an equivalent unit) and must also demonstrate skills and knowledge from the minimum years of current work experience** after competency has been obtained as **specified** below, including time spent in roles related to the unit being assessed.

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 Year
	2	2 Years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 Years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a Unit of Competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIHAN301E Operate elevating work platform

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 3.0.

Application

This unit describes the skills and knowledge required to operate an elevating work platform at any height.

This unit applies to those working in operational roles.

The work required in this unit relates to the National Standard for High Risk Work but this unit does not provide the licence. Licensing, legislative, regulatory or certification requirements that may apply to this unit can vary between states, territories and industry sectors, and must be sourced prior to applying this unit.

This unit alone does not provide sufficient skill to independently load and unload equipment. To perform this activity safely, personnel must either complete or be assisted by someone who has completed RIIHAN308F Load and Unload Plant or equivalent.

Unit Sector

Coal mining

Metalliferous mining

Drilling

Extractive

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for operating an elevating work platform	1.1 Access, interpret and apply elevating work platforms documentation for allocated job and ensure work activity is compliant with site policies and procedures to perform the work as planned

	<p>1.2 Obtain, interpret, clarify and confirm work requirements</p> <p>1.3 Confirm hazards, environmental issues, and risks, and implement required control measures according to site risk management plans and processes</p> <p>1.4 Select and wear personal protective equipment required for work activities</p> <p>1.5 Obtain and interpret emergency procedures for elevating work platform in preparation for emergencies and incidents</p> <p>1.6 Coordinate and communicate planned activities with others at the site prior to commencing work activity</p>
<p>2. Operate elevating work platform in line with established requirements to complete work activity</p>	<p>2.1 Carry out pre-start and post-start inspections and checks in line with Australian Standards and workplace procedures</p> <p>2.2 Identify faults or defects and report within scope of own responsibility and according to workplace procedures</p> <p>2.3 Apply site specific requirements for relocating the elevating work platform to work site</p> <p>2.4 Stabilise or position elevating work platform according to work site conditions and requirements</p> <p>2.5 Ensure work site is clear of personnel and other potential hazards</p> <p>2.6 Place any tools and equipment required to perform work activity into bucket or platform according to workplace procedures</p> <p>2.7 Operate elevating work platform within performance capabilities of brand and model of elevating work platform</p> <p>2.8 Use manufacturer approved safety devices fitted to the machine in line with workplace procedures where applicable</p> <p>2.9 Respond accordingly to monitoring systems and alarms according to workplace procedures</p> <p>2.10 Monitor hazards and risks and ensure safety of self, other personnel, plant and equipment</p> <p>2.11 Complete work activity and shut-down equipment in line with work requirements and workplace procedures</p>
<p>3. Conduct housekeeping activities</p>	<p>3.1 Clear work area and dispose, reuse or recycle materials</p> <p>3.2 Move the elevating work platform to a safe space, applying site specific workplace procedures and requirements</p> <p>3.3 Check, clean, maintain and store elevating work platform, tools and equipment according to workplace procedures</p> <p>3.4 Complete and file documentation, and distribute according to workplace requirements</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Identifies and interprets relevant information and ideas from workplace procedures, documentation, safety alerts, legislation and regulations
Numeracy	<ul style="list-style-type: none"> Identifies and comprehends relevant mathematical information in required to determine equipment operating capacities

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
RIIHAN301E Operate elevating work platform (Release 1)	RIIHAN301D Operate elevating work platform (Release 3)	Minor updates to all sections to reflect operator's role.	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIHAN301E Operate elevating work platform

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 3.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements and performance criteria of this unit.

The candidate must demonstrate completion of operating an elevating work platform that safely, effectively and efficiently follows legislative requirements and workplace procedures to carry out work activity on at least two occasions. This includes:

- planning and preparing for operating elevating work platforms
- selecting and using the required plant, tools and equipment to perform work activity
- identifying site requirements for emergencies at heights
- stabilising or positioning elevating work platform
- using manufacturer approved safety devices fitted to the machine
- moving the elevating work platform to and from work site
- inspecting work platform and identifying faults
- reviewing machine maintenance logbook records
- checking, cleaning, maintaining and storing elevating work platform, tools and equipment

In the course of the above work, the candidate must also:

- locate and apply required documentation, policies and procedures
- select and wear personal protective equipment required for work activities
- monitor and manage equipment performance using indicators and alarms
- use a range of communication techniques and equipment essential to the safe completion of work instructions
- meet written and verbal reporting requirements and procedures associated with operating an elevating work platform

Knowledge Evidence

The candidate must demonstrate the following knowledge to effectively complete the tasks outlined in the elements and performance criteria of this unit.

Key policies, procedures and relevant standards for operating an elevating work platform as described in the performance evidence above, including those relating to:

- National Standard for high risk work
- safe work practices
- operating manuals for elevating work platform
- site personnel and operational safety requirements
- elevating work platform operational procedures
- hazard, incident and emergency identification and implementation of control measures, including the risk of overhead crushes, and distance from power lines
- disposal of hazardous materials

Key site information, including:

- suitability of ground conditions, terrain and structure surfaces
- environmental requirements and constraints related to elevating work platforms

Key features associated with performance of an elevating work platform, including:

- types of elevating work platforms, their characteristics, technical capabilities and limitations

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below.

The assessment must:

- include access to:
 - elevating work platform
 - personal protective equipment required for the activities described in the performance evidence
- be conducted in a safe environment
- be assessed in the context of this sector's work environment
- be assessed in compliance with relevant legislation and regulations and using policies, procedures, and processes directly related to the industry sector for which it is being assessed
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/AQTF mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing a high level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must hold the relevant vocational competencies and have current industry skills directly relevant to the training and assessment being provided, and must work alongside a trainer and/or assessor to conduct the assessment. This means the industry subject matter expert should hold the unit being assessed (or an equivalent unit) and must also demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed.

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 Year
	2	2 Years
Drilling, Coal Mining, Extractive (Quarrying),	3-6	3 Years

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Metalliferous Mining and Civil Infrastructure		
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors, assessor and/or industry subject matter expert experience should be in line with industry standards for the sector in which it is being assessed and, where no industry standard is specified, should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

***While a Unit of Competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIHAN309F Conduct telescopic materials handler operations

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 3.0.

Application

This unit describes the skills and knowledge required to conduct telescopic materials handler operations.

This unit applies to those working in site-based roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors, and must be sourced from state jurisdictions prior to applying this unit.

Unit Sector

Coal mining

Extractive

Metalliferous mining

Drilling

Civil Infrastructure

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for telescopic materials handler operations	1.1 Access, interpret and apply telescopic materials handler documentation 1.2 Obtain, interpret, clarify and confirm work requirements 1.3 Identify hazards and environmental issues, assess the risks and implement control measures in line with workplace policies 1.4 Select and wear personal protective equipment required for work

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	activities 1.5 Identify, obtain and apply signage requirements in line with workplace procedures 1.6 Select required telescopic materials handler equipment or attachments and confirm the suitability of the work activities 1.7 Coordinate and communicate planned activities with other at the site prior to commencement of work activity
2. Operate telescopic materials handler in line with established requirements	2.1 Perform pre-start and start-up check in line with workplace procedures 2.2 Check telescopic materials handler controls, brakes, attachments and other implements for manoeuvrability and serviceability and ensure faults are rectified or reported within scope of own responsibility and according to workplace procedures 2.3 Assess site and operating hazards and apply safe operating techniques 2.4 Operate telescopic materials handler using techniques suited to equipment capabilities, site and work conditions, and according to workplace procedures
3. Attach, secure, lift, carry and place materials to complete work activity	3.1 Use load handling communication methods as per standard operating procedures with all parties 3.2 Communicate with dogman to establish the weight of the load 3.3 Communicate with dogman to ensure safe working load requirements have been assessed and appropriate slings and lifting gear has been selected, attached and secured in line with workplace procedures 3.4 Locate machinery to ensure stable and effective shift of materials according to work requirements 3.5 Shift the load safely and effectively, using hand, audible and communication signals, in line with workplace procedures 3.6 Park up, shut down, secure and carry out post operational inspection of equipment in line with workplace procedures
4. Select, remove, fit and use attachments for a telescopic materials handler	4.1 Select attachment for the task and move and fit attachment in line with workplace procedures 4.2 Test and confirm correct fitting and operation 4.3 Use attachment within design limits and in accordance with

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	workplace procedures 4.4 Remove, clean and store attachment in line with workplace procedures
5. Relocate the telescopic materials handler	5.1 Prepare machine and equipment for relocation in line with safe work practices 5.2 Transport machine and equipment safely between worksites, observing relevant site codes and traffic management requirements
6. Conduct housekeeping activities	6.1 Clean-up work area and dispose or recycle materials according to workplace procedures. 6.2 Manage and/or report hazards to maintain a safe working environment 6.3 Complete and file or distribute documentation in a manner that complies with workplace practices

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Identifies and interprets information from workplace procedures, documentation, legislation and regulations
Numeracy	<ul style="list-style-type: none"> Uses equipment operating capacity schedule to confirm safe weight load limits

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
RIIHAN309F Conduct telescopic materials handler operations (Release	RIIHAN309E Conduct telescopic materials handler operations (Release 1)	Minor updates to reflect changes to operator maintenance and relocation	Equivalent

1)		activities, and assessment conditions for attachments.	
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Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIHAN309F Conduct telescopic materials handler operations

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 3.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements and performance criteria of this unit.

The candidate must demonstrate completion of telescope materials handler operations that safely, effectively and efficiently follow workplace procedures to carry out work activity on at least two occasions, and include:

- performing pre-start, start-up and shutdown procedures
- checking controls, brakes and attachments for manoeuvrability and serviceability and rectifying or reporting faults
- operating the telescopic materials handler
- attaching and securing appropriate lifting gear
- shifting the load
- selecting, fitting, testing, using and removing attachments, which must be certified and approved in line with workplace procedures
- transporting the machine and equipment between work sites
- parking and securing equipment

In the course of the above the candidate must also:

- locate and apply required documentation, policies and procedures
- select and wear personal protective equipment required for work activities
- apply safe work practices, identifying and reporting potential hazards and environmental issues, and assess risks
- access, interpret and apply technical information
- apply fault finding techniques
- monitor and manage equipment performance using indicators and alarms
- identify common equipment faults
- use a range of communication techniques and equipment essential to the safe completion of work activity, including hand, audible and other signals
- meet written and verbal reporting requirements and procedures associated with telescopic materials handler operations

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

Key policies and procedures, legislation and established requirements for telescopic materials handler operations, including those relating to:

- isolation and traffic control responsibilities and authorities
- safety data sheet and hazardous materials handling methods
- development and compliance with job safety analyses and safe work method statement
- maintenance and basic diagnostic
- recyclable materials
- housekeeping activities
- environmental management plan

Key factors affecting work activities described in performance evidence above, including:

- telescopic materials handler types, characteristics, technical capabilities and limitations
- calculating safe working loads
- methods of changing machine attachments
- safe operating techniques in varying terrain
- telescopic materials handler and attachment operating techniques

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - telescopic materials handler
 - attachments
 - personal protective equipment
- be conducted in a safe environment and,
- be assessed in context of this sector's work environment and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed and
- confirm consistent performance can be applied in a range of relevant workplace circumstances

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/AQTF mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing a high level of RII training product knowledge
- having an understanding and knowledge of legislations and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must hold the relevant vocational competencies and have current industry skills directly relevant to the training and assessment being provided, and must work alongside a trainer and/or assessor to conduct the assessment. This means the industry subject matter expert should hold the unit being assessed (or an equivalent unit), and must also demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 Year
	2	2 Years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 Years
Other sectors	Where this unit is being assessed outside of the Resources and Infrastructure Sectors, assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and, where no industry standard is specified, should comply with any relevant	

	regulation.
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*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a Unit of Competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIMPO320F Conduct civil construction excavator operations

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 3.0.
Release 2	Editorial corrections.
Release 3	Editorial corrections to performance evidence.

Application

This unit describes the skills and knowledge required to operate excavator operations to lift carry and place materials.

This unit applies to those working in site based roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors, and must be sourced from state jurisdictions prior to applying this unit.

This unit alone does not provide sufficient skill to independently load and unload equipment. To perform this activity safely, personnel must either complete or be assisted by someone who has completed RIIHAN308F Load and Unload Plant or equivalent.

Unit Sector

Civil infrastructure

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for excavator operations	1.1 Access, interpret and apply excavator operations documentation 1.2 Obtain, interpret, clarify and confirm work requirements 1.3 Identify hazards and environmental issues, assess the risks and implement control measures in line with workplace policies 1.4 Select and wear personal protective equipment required for work

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	activities 1.5 Obtain, identify and implement traffic management signage requirements according to standard operating procedures and safe work practices 1.6 Select required excavator equipment and/or attachments and confirm suitability for work activities 1.7 Obtain and interpret emergency procedures for excavators, and be prepared for fires, accidents and emergencies 1.8 Coordinate and communicate planned activities with others at the site prior to commencement of work activity
2. Operate excavator in line with established requirements	2.1 Carry out prestart and start-up checks in line with workplace procedures 2.2 Identify faults or defects and rectify or report within scope of own responsibility and according to workplace procedures 2.3 Drive and operate excavator using techniques suited to equipment capabilities, site and work conditions, and according to workplace procedures 2.4 Monitor hazards and risks during operations, and ensure safety of self, other personnel, plant and equipment 2.5 Monitor and manage equipment performance using indicators and alarms in line with manufacturers' specifications
3. Lift, carry and place materials to complete work activity	3.1 Establish weight of load and ensure it is within safe operational limits of the machine 3.2 Use lifting gear within safe working load requirements and in line with workplace requirements 3.3 Position machinery and ensure stable and effective shift of materials according to work requirements 3.4 Shift load safely and effectively, using hand, audible and communication signal, in line with workplace procedures 3.5 Park up, shut down, secure and carry out post operational inspection of equipment in line with workplace procedures
4. Select, remove, fit and use attachments for a excavator	4.1 Select attachment for the task 4.2 Fit attachment in line with workplace procedures 4.3 Test attachment and ensure correct fitting and operation

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	<p>4.4 Use attachment within design limits and in accordance with workplace procedures</p> <p>4.5 Remove, clean and store attachments in designated location in line with workplace procedures</p>
5. Prepare to relocate the excavator	<p>5.1 Prepare excavator for relocation</p> <p>5.2 Move excavator safely within and/or between work areas, observing relevant codes and traffic management requirements</p> <p>5.3 Assist loading and unloading machine from float/trailer in line with workplace procedures</p>
6. Conduct housekeeping activities	<p>6.1 Clear work area and dispose of or recycle materials according to workplace procedures</p> <p>6.2 Manage and/or report hazards to maintain a safe working environment</p> <p>6.3 Complete and file or distribute documentation in a manner that complies with workplace practices</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skill	Description
Reading	<ul style="list-style-type: none"> Identifies and interprets information from workplace procedures, documentation, legislation and regulations
Numeracy	<ul style="list-style-type: none"> Uses equipment operating capacity schedule to confirm safe weight load limits

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
RIIMPO320F Conduct civil construction excavator operations (Release 2)	RIIMPO320F Conduct civil construction excavator operations (Release 1)	Editorial corrections.	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIMPO320F Conduct civil construction excavator operations

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 3.0.
Release 2	Editorial corrections.
Release 3	Editorial corrections to performance evidence.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements and performance criteria of this unit.

The candidate must demonstrate completion of excavator operations that safely, effectively and efficiently follows workplace procedures to carry out work activity on at least two occasions, and include:

- conducting prestart checks prior to commencing operations and shutdown procedures on completion of operations
- driving and operating the equipment, and adjusting techniques to site conditions
- completing operations to specification using at least two different material types and activities including:
 - loading, cutting/boxing
 - stripping/spreading
 - lifting and carry materials
 - bulk excavation
 - mixing/backfilling
 - trench excavation
 - stockpiling
 - battering
 - benching
 - site clean up
- selecting, fitting, testing, using and removing at least three attachments, the attachment must be certified and approved in line with workplace procedures and could include, but not limited to, the following:
 - tilt bucket

- buckets
- lifting device
- vibrating compaction wheel
- ripper/tyne
- compaction plate
- compaction wheel
- rock breaker
- auger
- ground engaging tools
- assisting with loading and unloading plant type from float/trailer
- parking and securing equipment

In the course of the above work the candidate must also:

- locate and apply relevant documentation, policies and procedures
- select and wear personal protective equipment required for work activities
- carry out vehicle refuelling requirements and procedures where applicable
- apply safe work practices, identifying and reporting all potential hazards, risks and environmental issues
- apply problem solving and troubleshooting techniques when operating equipment
- monitor and manage equipment performance using indicators and alarms
- identify common equipment faults
- apply levelling techniques
- select and use the required tools and equipment
- apply methods of changing machine attachments
- establish weight of load
- manage changes in the loads centre of gravity during transportation
- use a range of communication techniques and equipment essential to the safe completion of work activity, including hand, audible and other signals
- meet written and verbal reporting requirements and procedures associated with equipment operations
- organise work activities to meet all task requirements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit. This includes:

Key policies and procedures, legislation and established requirements for excavator operations, including those relating to:

- isolation requirements
- fires, accidents and emergencies
- work health and safety, including signs of operator fatigue and how it should be managed
- site isolation and traffic control responsibilities and authorities

- project quality requirements
- chain of responsibility for loading and unloading of equipment
- operational, maintenance and basic diagnostics
- personal protective equipment
- recyclable materials
- housekeeping activities

Key factors affecting work activities described in performance evidence above, including:

- equipment processes, technical capability and limitations
- drawings and sketches
- ground conditions
- materials characteristics, including density and viscosity

Key features associated with civil construction works, including:

- civil construction terminology
- basic principles of material technology and material compaction for civil works
- basic earthworks calculations
- civil construction activity sequences of road construction, earthworks and drainage.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - excavator
 - attachments
 - personal protective equipment
- be conducted in a safe environment; and,
- be assessed in context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor Requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory competency standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/AQTF mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing a high level of RII training product knowledge
- having an understanding and knowledge of legislations and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must hold the relevant vocational competencies and have current industry skills directly relevant to the training and assessment being provided and must work alongside a trainer and/or assessor to conduct the assessment. This means the industry subject matter expert should hold the unit being assessed (or an equivalent unit), and must also demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 Year
	2	2 Years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 Years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors, assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being	

	assessed and, where no industry standard is specified, should comply with any relevant regulation.
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*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a Unit of Competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIRIS202E Respond to site based spills

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to respond to site based spills in the resources and infrastructure industries.

It applies to those working in operational roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take responsibility for the quality of work outcomes.

Licensing, legislative and certification requirements may apply to this unit and can vary between states, territories and industry sectors. Users must check requirements with relevant body before applying the unit.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for responding to site based spills	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply documentation required to respond to site based spills 1.3 Coordinate activities with others and establish communication systems to be used during spills 1.4 Identify and address potential risks, hazards and environmental issues, and implement control measures according to workplace procedures 1.5 Select and wear personal protective equipment appropriate for work activities 1.6 Identify effective handling procedures for general and hazardous waste 1.7 Identify and communicate team responsibilities when managing a spill with others as required and according to

ELEMENT	PERFORMANCE CRITERIA
	workplace procedures 1.8 Identify reporting responsibilities when a spill occurs 1.9 Obtain and interpret emergency procedures, and be prepared for emergency situations
2. Assess and identify spill type	2.1 Identify chemicals or products involved in the spill according to workplace procedures 2.2 Locate, read and interpret safety data sheets to identify required action to manage the spill 2.3 Identify hazardous chemicals and their effects 2.4 Determine the potential volume and size of spill according to workplace procedures 2.5 Determine the potential risk to the environment according to workplace procedures
3. Conduct the spill response	3.1 Determine the appropriate method and resources required to control the spill 3.2 Select and wear personal protective equipment appropriate to manage the spill 3.3 Control and contain the spill relative to spill type and size according to workplace procedures 3.4 Communicate and seek assistance from relevant personnel if unable to handle spill independently 3.5 Clean up spill according to job requirements and workplace procedures 3.6 Apply processes for managing and disposing of hazardous waste according to workplace procedures
4. Complete written documentation and reporting requirements	4.1 Communicate spill response to relevant personnel 4.2 Complete written records and reports for spill response according to workplace procedures 4.3 Record and report use of spill response kits for replenishment

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none"> Identifies and interprets information from workplace procedures, documentation and regulations

SKILL	DESCRIPTION
Writing	<ul style="list-style-type: none">• Produces and completes written documents required for workplace procedures and regulatory requirements
Self-management	<ul style="list-style-type: none">• Monitors and minimises own exposure to worksite risks and hazards during activities

Unit Mapping Information

Supersedes and is equivalent to RIIRIS202D Respond to site based spills.

Links

Companion Volume implementation guides is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIRIS202E Respond to site based spills

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- respond to site based spills on at least two occasions, including:
 - determining the spill type, including minor, medium or major spills
 - locating, interpreting and communicating safety data sheet requirements for spill products
 - implementing spill control measures using spill kits or available resources
 - communicating the spill and likely impact to others
 - coordinating the spill clean-up activity with others
 - controlling and containing the spill
 - implementing clean up and disposal of waste
 - preparing a written report on spill response activity and spill kit resource usage.

During the above, the candidate must:

- locate and apply relevant documentation, policies and procedures and confirm that the work activity is compliant
- implement the requirements, procedures and techniques for responding to site based spills
- work effectively with others to respond to site based spills in a way that meets all required outcomes
- communicate clearly and concisely with others to receive and clarify work instructions and to determine coordination requirements prior to commencing and during work activities.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key legislation required to respond to site based spills
- key policies, procedures and documentation required to respond to site based spills, including:
 - safety data sheet information
 - site procedures for minor, medium and major spills
 - worksite communication, reporting and recording procedures
- principles and techniques for responding to site based spills, including:
 - spill characteristics
 - spill types
 - spill kit usage
 - risks of site based storage
- principles and techniques for identifying relevant hazards and emergencies
- techniques for coordinating and communicating job activities with others.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment related to responding to site based spills
 - relevant documentation
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment

- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIRTM203E Work as a safety observer/spotter

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to work safely as a safety observer/spotter in civil construction. This includes identifying and managing worksite hazards, establishing exclusion zones and observing work activities to monitor the safety of the work environment.

It applies to those working in operational roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take some responsibility for the quality of work outcomes.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Civil Construction

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to work as a safety observer/spotter	1.1 Obtain, interpret, clarify and confirm work instructions 1.2 Access, interpret and apply documentation required to work as a safety observer/spotter 1.3 Select and wear personal protective equipment according to site requirements 1.4 Identify and address potential risks, hazards and environmental issues, and implement control measures within scope of role 1.5 Identify, confirm and apply environmental protection requirements

ELEMENT	PERFORMANCE CRITERIA
	1.6 Obtain and interpret emergency procedures and identify steps required to respond to emergencies 1.7 Coordinate work activities with others according to job requirements and within scope of own role
2. Identify and manage hazards	2.1 Confirm working areas permit vehicle, plant and pedestrian access 2.2 Check where personnel working on foot are in close proximity to moving plant 2.3 Conduct site specific risk assessment and confirm hazards have been identified and safety controls in place from traffic management plan
3. Support work activities	3.1 Operate communication devices to support work activities 3.2 Maintain exclusion, no-go and pedestrian zones according to job and safety requirements 3.3 Maintain sight visibility of work being performed 3.4 Communicate to required personnel any hazards identified during work activities
4. Conduct clean-up activities	4.1 Confirm tools and equipment are cleaned, checked, maintained and stored according to manufacturer specifications and site requirements 4.2 Confirm work area is checked, cleaned and tidy according to site requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Self-management	<ul style="list-style-type: none"> Monitors and minimises own exposure to worksite risks and hazards during work activities
Oral communication	<ul style="list-style-type: none"> Conveys information and instructions to other verbally

Unit Mapping Information

Supersedes and is equivalent to RIIRTM203D Work as a safety observer/spotter.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIRTM203E Work as a safety observer/spotter

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- work as a safety observer/spotter on at least two occasions, including:
 - directing and controlling vehicle traffic
 - directing and controlling pedestrian traffic
 - communicating to drivers and pedestrians using hand signals
 - using communication devices
 - maintaining no-go and exclusion zones.

During the above, the candidate must:

- locate and apply relevant legislation, documentation, policies and procedures
- implement the requirements, procedures and techniques for working as a safety observer/spotter, including:
 - identifying, reporting and recording hazards and risks, and recommending control measures
 - identifying and applying environmental protection requirements
 - conducting pre-start checks and shut down procedures
 - carrying out inspection and fault finding as per manufacturer instructions and organisational requirements
- work with others to complete the operation of working as a safety observer/spotter that meets required outcomes, including:
 - using communication techniques and equipment to convey information to others
 - completing written and verbal reporting requirements
 - organising work activities to meet task requirements
 - communicating with others to receive and clarify work instructions.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislation required to work as a safety observer/spotter
- policies, procedures and documentation required to work as a safety observer/spotter, including those relating to:
 - statutory compliance
 - Australian and other relevant standards
 - work, health and safety
 - emergency response
 - work instructions
 - environmental protection
 - verbal and written communication
 - site and equipment safety
 - mobile traffic control
 - vehicle movements
 - risk assessment and management
 - underground and overhead services
 - equipment operation and maintenance
 - manufacturer specifications for required equipment
 - site requirements and regulations
 - project quality requirements
 - workplace recording and reporting
 - traffic management plans
 - traffic regulations
- principles and techniques to work as a safety observer/spotter, including:
 - plant shadows/blind spots
 - interpreting traffic management plans and diagrams
 - operating communication devices, including whistles, pneumatic horns and handheld radios, to transmit messages
- types, characteristics, technical capabilities and limitations of plant and equipment required to work as a safety observer/spotter.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - safety observer/spotting equipment
- be conducted in a safe environment; and,

- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector’s workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years

Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

***While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume Implementation Guide is found on VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIWHS202E Enter and work in confined spaces

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.
Release 2	Minor amendment to Knowledge Evidence to correct typographical error.

Application

This unit describes the skills and knowledge required to enter and work in confined spaces in the resources and infrastructure industries.

It applies to those working in operational roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take responsibility for the quality of work outcomes.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories and industry sectors. Users must check requirements with relevant body before applying the unit.

Note: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare for working in confined space	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply documentation required to enter and work in confined spaces 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures according to workplace procedures 1.4 Obtain and confirm authorisation of a confined space entry permit

ELEMENT	PERFORMANCE CRITERIA
	<p>that meets regulatory requirements</p> <p>1.5 Select and wear appropriate personal protective equipment for planned work activities</p> <p>1.6 Obtain and interpret emergency procedures with the stand-by person, and be prepared for emergency situations</p> <p>1.7 Identify, obtain and implement signage and barrier requirements according to workplace procedures</p> <p>1.8 Select tools and equipment for the tasks, check for serviceability and rectify or report any faults to relevant personnel</p> <p>1.9 Position rescue equipment by the entry permit</p>
2. Work in confined space	<p>2.1 Gain access to confined space</p> <p>2.2 Test and monitor the atmosphere for harmful elements according to workplace procedures</p> <p>2.3 Correctly apply tagging and lock-out procedures</p> <p>2.4 Enter the confined space according to workplace procedures</p> <p>2.5 Maintain ongoing communication with the stand-by person</p> <p>2.6 Comply with entry permit requirements</p> <p>2.7 Monitor and adhere to allocated entry time</p>
3. Exit confined space	<p>3.1 Exit confined space according to workplace procedures</p> <p>3.2 Recover tools, equipment and materials</p> <p>3.3 Conduct inspection of the confined spaces according to workplace procedures</p> <p>3.4 Remove tagging and lock-out procedures</p> <p>3.5 Complete confined space entry permit requirements according to workplace procedures</p>
4. Clean up	<p>4.1 Clear work area and dispose of materials according to workplace procedures</p> <p>4.2 Remove, clean and store barriers and signs</p> <p>4.3 Conduct equipment inspections to identify faults according to manufacturer specifications and workplace procedures and report to relevant personnel</p> <p>4.4 Conduct routine operational servicing, lubrication and housekeeping activities according to workplace procedures</p> <p>4.5 Process written maintenance records according to workplace procedures</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Reading	<ul style="list-style-type: none">Identifies and interprets information from workplace procedures, documentation and regulations
Writing	<ul style="list-style-type: none">Produces and completes written documents required for workplace procedures
Self-management	<ul style="list-style-type: none">Monitors and minimises own exposure to worksite risks and hazards during activities
Oral communication	<ul style="list-style-type: none">Uses a range of communication techniques and systems to communicate with others

Unit Mapping Information

Supersedes and is equivalent to RIIWHS202D Entering and working in confined spaces.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIWHS202E Enter and work in confined spaces

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.
Release 2	Minor amendment to Knowledge Evidence to correct typographical error.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- enter and work in confined spaces on at least two occasions, including:
 - obtaining the required entry permit and instructions for performing work in confined spaces
 - interpreting and applying workplace procedures
 - applying tagging and lock out procedures
 - selecting, wearing and caring for personal protective equipment
 - using atmospheric monitoring devices prior to entering the confined space
 - entering the confined space
 - working in the confined space
 - using atmospheric monitoring devices during confined space activity
 - applying safe materials handling methods
 - exiting the confined space
 - removing tagging and lock out.

During the above, the candidate must:

- locate and apply relevant legislation, documentation, policies and procedures and confirm that the work activity is compliant
- implement the requirements, procedures and techniques for entering and working in confined spaces
- work effectively with others to enter and work in confined spaces in a way that meets all required outcomes

- communicate clearly and concisely with others to receive and clarify work instructions and to determine coordination requirements prior to commencing and during work activities.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key legislation relevant to enter and work in confined spaces
- key policies, procedures and documentation required to enter and work in confined spaces, including:
 - entry and exit procedures, risks and regulations
 - site and equipment safety requirements
 - site isolation and site control responsibilities and authorities
 - safety data sheets
 - incidents and emergency response documentation
- principles and techniques for identifying and responding to:
 - areas that constitute confined spaces
 - types of air contaminants and toxic gases
 - limitations of breathing apparatus
 - relevant hazards and emergencies
- equipment types, characteristics, technical capabilities and limitations
- principles and techniques for using confined space and industry terminology
- techniques for coordinating and communicating job activities with others.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment related to entering and working in confined spaces
 - relevant documentation
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert	

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
		experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.

*Guidance on simulated environments has been stipulated in the Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume Implementation Guide is found on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIWHS205E Control traffic with stop-slow bat

Modification History

This unit replaces RIIWHS205D Control traffic with slow-stop bat. Significant endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Application

This unit describes the skills and knowledge required to control vehicle and pedestrian traffic using stop-slow bats, hand signals and approved communication devices in the resources and infrastructure industries.

It applies to those working in operational roles. They generally work in teams in live traffic environments under some degree of supervision.

Note: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented registered training organisations are advised to contextualise the unit of competency by referring to the existing state/territory OHS legislative requirements

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to control traffic	1.1 Select and wear personal protective equipment required for work activities 1.2 Access, interpret and confirm work instructions and plan work 1.3 Access, interpret and apply required workplace policies, procedures, jurisdictional safety and environmental protection requirements 1.4 Obtain and interpret site emergency procedures and prepare for accidents and emergencies 1.5 Select tools and equipment, check for serviceability, and rectify faults and report according to workplace policies and procedures
2. Control traffic and operate	2.1 Adjust approved communication devices according to site

communication devices	<p>requirements</p> <p>2.2 Direct traffic using hand held stop-slow bat and visibly clear and unobstructed hand signals as required</p> <p>2.3 Monitor traffic, make adjustments for changing traffic conditions and position waiting vehicles as required</p> <p>2.4 Communicate messages to other personnel, confirm recipient understanding and clarify as required</p> <p>2.5 Check and perform maintenance on approved communication devices according to requirements</p> <p>2.6 Check communications contact after nominated period of non-contact</p> <p>2.7 Report traffic offenders according to workplace policies and procedures</p>
3. Conduct housekeeping activities	<p>3.1 Confirm and remove signs and devices in line with job requirements and cover as required</p> <p>3.2 Clean, check and store tools and equipment</p> <p>3.3 Report environmental damage and potential for future damage as required</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Numeracy	<ul style="list-style-type: none"> Applies basic mathematical problem solving processes, including simple addition, subtraction, multiplication and division
Oral communication	<ul style="list-style-type: none"> Listens to short, explicit instructions for work procedures and asks questions to clarify and confirm
Reading	<ul style="list-style-type: none"> Identifies and interprets information from workplace procedures, documentation, legislation and regulations
Technology	<ul style="list-style-type: none"> Identifies purposes, specific functions and key features of common digital systems and tools and operates them as required
Writing	<ul style="list-style-type: none"> Produces and completes workplace reports using appropriate vocabulary, grammatical structures and conventions

Unit Mapping Information

Supersedes and is equivalent to RIIWHS205D Control traffic with stop-slow bat.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIWHS205E Control traffic with stop-slow bat

Modification History

This unit replaces RIIWHS205D Control traffic with slow-stop bat. Significant endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- Control traffic with a stop-slow bat according to traffic guidance schemes in a manner that is safe and follows workplace policies and procedures on at least two occasions, including:
 - directing pedestrian traffic, including at least one of the following:
 - ~ pedestrians with mobility issues
 - ~ pedestrians with prams
 - ~ cyclists
 - using approved communication devices to transmit message and report traffic offenders, including the use of at least one of the following devices:
 - ~ hand held radios
 - ~ telephones.

During the above, the candidate must:

- coordinate operations with pilot vehicle in a shuttle flow work arrangement
- participate in risk assessment and management processes
- identify the type and scope of hazards and their impact and recommend risk control measures
- identify key environmental protection issues and describe required solutions
- locate and complete at least one incident report
- complete housekeeping requirements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- risk assessment processes and hierarchy of control
- work instructions and procedures for planning work
- jurisdictional safety requirements relevant to temporary traffic management

- environmental protection requirements
- site emergency procedures
- site and equipment safety requirements
- traffic control requirements and procedures for directing the following pedestrian traffic groups:
 - pedestrians with mobility issues
 - pedestrians with prams
 - cyclists
- traffic guidance scheme and traffic management plan compliance
- communication device operations, including:
 - hand held radios
 - telephones
- traffic control equipment types, characteristics, technical capabilities and limitations
- operational and maintenance procedures for equipment
- site isolation and traffic control responsibilities and authorities
- the effects of travel speed and vehicle mass on stopping distances.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - stop-slow bat
 - personal protective equipment
 - hand held radio or telephone
- be conducted in a safe environment; and
- be assessed in context of this sector's work environment on a real live road setting under supervision; and
- be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and
- confirm consistent performance can be applied in a range of relevant workplace circumstances

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor Requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory competency standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing a high level of RII training product knowledge
- having an understanding and knowledge of legislations and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence as outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must hold the relevant vocational competencies and have current industry skills directly relevant to the training and assessment being provided and must work alongside a trainer and/or assessor to conduct the assessment. This means the industry subject matter expert should hold the unit being assessed (or an equivalent unit), and must also demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 year
	2	2 years
Drilling, Coal Mining and Extractive (Quarrying), Metalliferous Mining and Civil Construction	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any	

	relevant regulation.
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*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIWHS301E Conduct safety and health investigations

Modification History

This unit replaces RIIWHS301D Conduct safety and health investigations. Significant endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Application

This unit describes the skills and knowledge required to conduct work related health and safety investigations as a result of an incident and to contribute to a safe workplace.

It applies to individuals who participate in work related health and safety investigations as part of their responsibilities.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories and industry sectors. Users must check requirements with relevant body before applying the unit.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<p><i>Elements describe the essential outcomes.</i></p> <p>1. Determine the objectives and develop investigation plan</p>	<p><i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i></p> <p>1.1 Identify, access and interpret work related health and safety investigation documentation, policies and procedures</p> <p>1.2 Determine the scope of the investigation to create an investigation plan according to workplace policies and procedures</p> <p>1.3 Confirm pre- and post-incident timeframe is consistent with all site and legislative requirements</p> <p>1.4 Determine the need for eliminating safety hazards and address the needs of those involved in the incident and incorporate into investigation plan</p> <p>1.5 Test the proposed objectives to clarify the scope of the investigation</p> <p>1.6 Consult individuals and/or parties in accordance with workplace policies and procedures</p> <p>1.7 Review investigation plan to check it includes agreed timelines, objectives, responsibilities, roles,</p>

ELEMENT	PERFORMANCE CRITERIA
	<p>documentation, actions and outcomes</p> <p>1.8 Communicate investigation plan to relevant individuals and/or parties in accordance with own role and responsibilities</p>
2. Gather information	<p>2.1 Maintain site security and integrity of evidence in accordance with site and legislative requirements</p> <p>2.2 Plan and prepare for the systematic collection of information and data</p> <p>2.3 Schedule information and data collection and completion to ensure minimum backtracking or repeat actions</p> <p>2.4 Confirm methods used to collect and examine information, including interviewing and recording, meet site and legislative requirements</p> <p>2.5 Collect, test and organise all appropriate information according to workplace policies and procedures</p>
3. Evaluate information	<p>3.1 Assess and evaluate information and data for validity and reliability to aid decision making</p> <p>3.2 Undertake further research where information or data is unclear or inadequate, and rectify in accordance with investigation plan</p> <p>3.3 Analyse the evidence to determine causes of the incident in accordance with own role and responsibilities</p> <p>3.4 Draw investigation conclusions in accordance with investigation plan, workplace policies and procedures</p> <p>3.5 Confirm findings and consider objectivity, confidentiality, validity and accuracy</p>
4. Identify courses of action	<p>4.1 Frame options and articulate findings to investigation team, in accordance with own role, responsibilities and workplace policies and procedures</p> <p>4.2 Confirm options are provided in a form which meets the audience requirements, can be easily understood and enables selection of the most appropriate courses of action</p> <p>4.3 Collate courses of action to identify actions for future prevention, in accordance with own role, responsibilities and workplace policies and procedures</p> <p>4.4 Confirm courses of action are implemented and evaluated in accordance with investigation plan and workplace policies and procedures</p>
5. Prepare and present	5.1 Prepare investigation reports according to own job role,

ELEMENT	PERFORMANCE CRITERIA
investigation reports	<p>responsibilities and workplace policies and procedures</p> <p>5.2 Present written and graphical reports using a clear and concise structure and format appropriate to audience</p> <p>5.3 Communicate outcomes to relevant individuals and/or parties according to workplace policies and procedures</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Writing	<ul style="list-style-type: none"> Documents procedures, plans and outcomes using appropriate organisational formats and industry specific terminology Develops reports using structure, format and language appropriate for purpose and audience
Oral communication	<ul style="list-style-type: none"> Uses appropriate language and non-verbal features to provide support, give instructions or request information
Interact with others	<ul style="list-style-type: none"> Identifies and uses appropriate conventions and protocols when communicating with parties involved in various investigation stages Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction Takes a role in helping develop team understanding of investigation requirements

Unit Mapping Information

Supersedes and is equivalent to RIIWH301D Conduct safety and health investigations.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIWHS301E Conduct safety and health investigations

Modification History

This unit replaces RIIWHS301D Conduct safety and health investigations. Significant endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements and performance criteria of this unit.

The candidate must demonstrate evidence of completion of participating in work related health and safety investigations that safely, effectively and efficiently follows workplace procedures to carry out work activity on at least two occasions. This includes:

- determining objective and authority of the investigation
- creating an investigation plan
- planning and organising activity to gather evidence and data, including but not limited to:
 - lists of witnesses
 - interviews
 - statements
 - audio recordings
 - photographs
 - scale diagrams of area
- undertaking research to gather evidence and data
- engaging others in the investigation process
- questioning and actively listening to those involved in the investigation
- correctly collecting and maintaining the integrity of evidence and procedural fairness
- identifying and/or confirming the linkages between factors and outcomes, causes and effects and direct/indirect causal relationships
- drawing conclusions and identifying appropriate course of action to resolve issue
- communicating outcomes to relevant individuals and/or parties
- writing clearly, concisely and effectively report investigation outcomes and presenting the outcomes to others.

In the course of the above work, the candidate must also:

- locate and apply relevant legislation, documentation, policies and procedures.

Knowledge Evidence

The candidate must demonstrate the following knowledge to effectively complete the tasks outlined in the elements and performance criteria of this unit. This includes:

- commonwealth and state or territory legislation relevant to conducting safety and health investigations
- internal and external sources of work related health and safety information and data relevant to investigations
- applicable organisational work related health and safety policies, procedures, processes and systems relevant to work role
- topic or subject area which is the target for the investigation
- theory of safety and health investigative research and analysis
- symptoms and possible immediate effects of post-traumatic stress in an investigation situation
- industry context to incidents and investigations
- methods for collecting and analysing safety and health information and data
- site procedures and conventions related to work related health and safety investigations
- site risk management processes and their applications
- conventions and requirements for written communications, including report writing.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - an incident (live, or simulated based on historical incidents)
 - site investigation plans
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor Requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIWH302E Implement traffic management plans

Modification History

This unit replaces RIIWH302D Implement traffic management plan. Significant endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Application

This unit describes the skills and knowledge required to set out, monitor and close down traffic management plans and traffic guidance schemes in civil construction.

It applies to those working in supervisory roles. They generally work in teams in live traffic environments and hold some responsibility for the outcomes of others.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Note: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented registered training organisations are advised to contextualise the unit of competency by referring to the existing state/territory OHS legislative requirements.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to implement traffic management plan	1.1 Determine worksite requirements and scope of traffic management plan and traffic guidance scheme 1.2 Identify, address and report potential risks, hazards and environmental issues and determine control measures 1.3 Validate suitability of traffic management plan and traffic guidance scheme to site conditions, traffic volumes and work activities and confirm requirements are met 1.4 Resource personnel to implement traffic management plan and traffic guidance scheme according to workplace policies and procedures 1.5 Confirm required liaison and communication activities are

	<p>carried out according to instructions</p> <p>1.6 Provide traffic guidance scheme implementation instructions to traffic control personnel and clarify and confirm recipient understanding as required</p>
2. Set out traffic guidance scheme	<p>2.1 Check required signs and devices are positioned and installed according to traffic guidance scheme</p> <p>2.2 Inspect traffic guidance scheme and authorise roadwork crew to proceed with work activities</p> <p>2.3 Confirm roadwork crew are protected from work site hazards</p>
3. Monitor traffic guidance scheme	<p>3.1 Confirm traffic flow is being monitored by required personnel according to traffic guidance scheme</p> <p>3.2 Apply adjustments to traffic guidance scheme as necessary to maintain required traffic flow and according to own job role</p> <p>3.3 Monitor work activities and apply required measures to mitigate and address roadwork crew and road user non-conformance</p> <p>3.4 Apply workplace policies and procedures to address offending road users as required</p>
4. Close down work activities	<p>4.1 Direct covering and required removal of equipment, signs and devices according to traffic guidance scheme</p> <p>4.2 Confirm tools and equipment are cleaned, checked, maintained and stored according to workplace policies and procedures</p> <p>4.3 Finalise traffic work zone close-down and complete required reporting</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Numeracy	<ul style="list-style-type: none"> Applies basic mathematical problem solving processes, including simple addition, subtraction, multiplication and division
Oral communication	<ul style="list-style-type: none"> Presents information and provides assistance using industry specific vocabulary Uses listening and questioning to clarify and confirm understanding
Reading	<ul style="list-style-type: none"> Identifies and interprets information from workplace procedures, documentation, legislation and regulations

Writing	<ul style="list-style-type: none">• Produces and completes workplace reports, including risk management matrices, using appropriate vocabulary, grammatical structures and conventions
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Unit Mapping Information

Supersedes and is equivalent to RIIWHS302D Implement traffic management plan.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIWHS302E Implement traffic management plans

Modification History

This unit replaces RIIWHS302D Implement traffic management plan. Significant endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- implement traffic management plans in a manner that is safe and follows workplace policies and procedures on at least three separate live traffic projects, including:
 - completing at least two of the following:
 - ~ lane closure
 - ~ lateral shift
 - ~ implementing a traffic management plan at an intersection
 - completing at least one project controlling site construction vehicles.

During the above, the candidate must:

- locate and apply required legislations, documentation, policies and procedures including documentation required for worksite projects and required traffic management
- work with traffic control personnel to implement and complete a traffic management plan and traffic guidance scheme that meets all required outcomes including:
 - confirming all necessary resources are available, including qualified personnel
 - confirming all personnel understand, and are able to implement, their roles, task requirements, safety requirements and reporting requirements
 - communicating with others to resolve resourcing and coordination requirements prior to and during work activities
 - confirming that unattended sites and shut-down procedures are completed according to traffic management plan and traffic guidance scheme
 - complying with written and verbal reporting requirements and procedures, including reporting offending road users.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- required legislation, regulations, codes and procedures including Austroads Codes of Practice and WHS applicable to temporary traffic management

- temporary traffic management principles
- risk management principles and procedures for identifying, analysing and treating potential hazards and risks
- key principles for implementing WHS, including the role of Job Safety Analysis, Job Safety and Environmental Analysis and Safe Work Method statements.
- scope of authority to modify traffic management plan and traffic guidance scheme
- basic signalling procedures for temporary traffic management
- procedures for selecting, using and placing signs and devices, including sequences of installation and removal and provisions for unattended sites
- radio operations procedures and protocols
- equipment types, characteristics, technical capabilities and limitations, including for required specialist and externally-sourced equipment
- site isolation, traffic control and emergency responsibilities and authorities.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - traffic management plan
 - traffic guidance scheme
 - personal protective equipment
 - devices, equipment and signs specified in the performance criteria
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment on a real live road setting under supervision; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor Requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided

- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

RIIWMG203E Drain and dewater civil construction sites

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to drain and dewater civil construction sites. This includes establishing sedimentation controls, constructing sumps, installing surface or submersible pumps, and draining surface water using surface drains.

It applies to those working in operational roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take some responsibility for the quality of work outcomes.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to drain and dewater	1.1 Obtain, interpret, clarify and confirm work requirements 1.2 Access, interpret and apply documentation required to drain and dewater civil construction sites 1.3 Obtain and interpret emergency procedures and identify steps required to respond to emergencies 1.4 Select and wear personal protective equipment according to site requirements 1.5 Confirm and identify requirements for complying with environmental protection, safety and traffic management signage

ELEMENT	PERFORMANCE CRITERIA
	<p>requirements</p> <p>1.6 Identify potential hazards and environmental issues, implement control measures within scope of own role and escalate where required</p> <p>1.7 Select plant, tools and equipment required to carry out tasks and check for faults</p> <p>1.8 Identify, confirm and locate materials required for work application</p>
2. Implement sedimentation control measures	<p>2.1 Position sedimentation controls according to job requirements</p> <p>2.2 Construct sedimentation control barriers according to job requirements</p> <p>2.3 Position geotextiles according to job requirements</p>
3. Remove surface water	<p>3.1 Establish temporary drainage systems to drain or divert water to storm water drainage system</p> <p>3.2 Remove slab and site surface water and direct to temporary drainage system</p> <p>3.3 Fill surface holes and depressions according to job requirements</p> <p>3.4 Drain surface water to drainage system</p>
4. Construct sump	<p>4.1 Determine sump position according to job specifications and sump positioning requirements</p> <p>4.2 Construct sumps according to job requirements</p>
5. Remove water from sump	<p>5.1 Install surface or submersible pumps according to job requirements</p> <p>5.2 Locate surface pump close to sump</p> <p>5.3 Pump water to temporary drainage system</p> <p>5.4 Disperse discharged water according to job and site requirements</p>
6. Conduct clean-up activities	<p>6.1 Clear work area and dispose of or recycle materials according to site requirements</p> <p>6.2 Clean, check, perform maintenance on and store plant, tools and equipment according to manufacturer specifications and site requirements</p>

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
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SKILL	DESCRIPTION
Oral communication	<ul style="list-style-type: none">• Identifies and interprets information from verbal instructions• Conveys information and instructions to others verbally
Self-management	<ul style="list-style-type: none">• Monitors and minimises own exposure to worksite risks and hazards during work activities

Unit Mapping Information

Supersedes and is equivalent to RIIWMG203D Drain and dewater civil construction site.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIWMG203E Drain and dewater civil construction sites

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- drain and dewater civil construction sites on at least two occasions, including:
 - dewatering a trench or pit using a pump
 - selecting and establishing sedimentation controls
 - selecting, installing and using surface or submersible pumps
 - pumping and dispersing surface and sub-surface water
 - draining surface water from a site using surface drains.

During the above, the candidate must:

- locate and apply required legislation, documentation, policies and procedures
- identify, report and record hazards and risks
- work with others to drain and dewater civil construction sites that meet required outcomes, including:
 - using communication techniques and equipment to convey information to others, including signage to advise others of work activity and exclusion zones
 - communicating with others to receive and clarify work instructions
 - completing written and verbal reporting requirements and procedures.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislation required to drain and dewater civil construction sites
- policies, procedures and documentation required to drain and dewater civil construction sites, including those relating to:
 - hazard and risk management

- work health and safety
- emergency response
- site and equipment safety
- environmental protection
- waste management
- communication techniques and equipment
- site isolation and traffic control responsibilities
- operational, maintenance and basic diagnostic procedures
- project quality requirements
- work instructions
- job plans and specifications
- site requirements
- manufacturer specifications for required plant and equipment
- workplace recording and reporting
- principles and techniques required to drain and dewater civil construction sites, including those relating to:
 - dewatering
 - areas to be drained
 - drainage systems
 - project sites
 - sedimentation controls
 - sump positioning
 - interpreting engineering drawings
- types, characteristics, technical capabilities and limitations of plant and equipment required to drain and dewater civil construction sites, including:
 - hoses
 - shovels
 - pumps
 - plastic piping
 - silt fences
- materials safety data sheet (SDS) compliance processes
- components of job safety analyses (JSAs), job safety environmental analyses (JSEAs), and safe work method statements (SWMs)
- civil construction terminology relating to draining and dewatering civil construction sites.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to drain and dewater civil construction sites

- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with required legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying)	1	1 year
	2	2 years

and Civil Infrastructure		
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume Implementation Guide is found on VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

TLIB3011 Set up and rig crane for lift

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to set up and rig a mobile crane for a lift. It includes the systematic positioning and stabilisation of the crane and its assembly prior to lift in a variety of operational contexts.

Work must be carried out in compliance with the relevant state/territory authority mobile crane operations licence/permit requirements and regulations.

Work is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

B – Equipment Checking and Maintenance

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Position and

1.1 Crane is directed to position in accordance with job plan,

stabilise crane

applicable Australian Standards, codes of practice and manufacturer specifications to ensure safe operation

- 1.2 Ground is checked to ensure it is firm enough to bear the load
- 1.3 Appropriate plates or packing are correctly used to adequately distribute load
- 1.4 Outriggers and stabilisers are correctly deployed and positioned in accordance with manufacturer instructions, appropriate Australian Standard and other relevant statutory regulations
- 1.5 Outrigger packing is checked for adequacy prior to and after lift is taken

2 Assemble crane

- 2.1 Block is reeved in accordance with manufacturer instructions
- 2.2 Counterweights are installed in accordance with manufacturer specifications
- 2.3 Attachments are set up in accordance with manufacturer instructions
- 2.4 Qualified rigger is consulted and other personnel are assisted as necessary to ensure efficient and safe assembly and set-up of crane
- 2.5 Straight fly jibs and luffing fly jibs are assembled and fitted in accordance with manufacturer instructions

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLIB3011A Set up and rig crane for lift.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLIB3011 Set up and rig crane for lift

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria on at least one occasion and include:

- applying precautions and required action to minimise, control or eliminate identified hazards
- applying procedures for fitting attachments and fly jibs
- applying relevant legislation and workplace procedures
- communicating effectively with others
- completing relevant documentation
- dealing with internal and external customers
- fitting fly jibs and attachments
- interpreting and following operational instructions and prioritising work
- monitoring work activities in terms of planned schedule and modifying activities depending on operational contingencies, risk situations and environments
- monitoring condition of equipment
- operating and adapting to differences in equipment in accordance with standard operating procedures
- operating electronic communications equipment to required protocol
- reading, interpreting and following relevant instructions, procedures, information and signs
- reporting and/or rectifying identified problems, faults or malfunctions promptly, in accordance with regulatory requirements and workplace procedures
- selecting and using appropriate personal protective equipment conforming to industry and work health and safety (WHS)/occupational health and safety (OHS) standards
- working collaboratively with others
- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and include knowledge of:

- company work procedures for setting up and rigging a mobile crane at a worksite
- hazard management strategies consistent with the principle of hierarchy of control (with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment)
- mobile crane applications, capacities, configurations, safety hazards and control mechanisms
- operational procedures for crane crews
- operational work systems and equipment
- procedures for fitting attachments and fly jibs
- procedures for identifying and correctly using equipment, processes and procedures
- relevant agreements, codes of practice or other legislative requirements
- relevant WHS/OHS and environmental procedures and regulations
- relevant road rules, regulations, permit and licence requirements for mobile crane operations and rigging mobile cranes.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

Assessment of setting up and rigging a mobile crane for a lift must occur in workplace operational situations where it is appropriate to do so. Where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions and involve the movement of equipment, goods, materials and vehicular traffic.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment include:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals, including relevant:
 - state/territory regulations and licence/permit requirements pertaining to mobile cranes
 - state/territory road rules
 - state/territory WHS/OHS legislation

- state/territory environmental protection legislation
- relevant materials, tools and equipment
- personal protective clothing and equipment, including:
 - gloves
 - safety headwear and footwear
 - sunscreen, sunglasses and safety glasses
 - two-way radios
 - high visibility clothing.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLIB3013 Maintain mobile cranes

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to carry out routine maintenance on a mobile crane, in compliance with licence/permit requirements, regulations and work requirements in a variety of operational contexts.

It includes obtaining and confirming job instructions and work specifications, coordinating loading of gear and equipment, assessing job requirements and work areas, designing job plan and setting up work area.

Work is performed under general supervision, with some accountability and responsibility for self and others in achieving the prescribed outcomes.

This unit applies to maintenance activity on equipment used by the operator and is limited to lubrication, fluid, filter and accessory changing and checks for cracks, surface or structural faults or other damage.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

B – Equipment Checking and Maintenance

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan maintenance operations

2 Complete pre-maintenance checks

3 Identify and assess faults found

4 Conduct maintenance operations and safety checks

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 Tags, service records, logbooks and crane manufacturer information are read prior to commencing maintenance, and previously identified and manufacturer recommendations are noted
- 1.2 Maintenance schedules are read and maintenance tasks are confirmed to match schedule
- 1.3 Step by step procedure is worked out to minimise time delays and to sequence maintenance processes consistent with manufacturer recommendations
- 2.1 Appropriate safe work area is selected for maintenance tasks
- 2.2 Required tools, consumables and equipment are identified and assembled
- 2.3 Equipment is inspected for visible faults and loose or damaged components
- 3.1 Conditions found are compared with manufacturer information and intended use of crane
- 3.2 Conditions noticed that may cause future difficulties are identified and potential effect on the safe and efficient operation of mobile crane is documented
- 3.3 Potential fault conditions are reported to appropriate personnel
- 4.1 Fluid replacements and lubrication operations are completed
- 4.2 Fluid levels are checked and adjusted
- 4.3 Mechanical components are checked to ensure attachments and tensions are secure
- 4.4 Mechanical adjustments are made
- 4.5 Maintenance plan is followed and appropriate adjustments are made to maintenance plan to deal with unexpected

events

4.6 Own work and crane system operations are checked to ensure crane's operational condition is in accordance with required specifications

4.7 Tools, equipment and unused consumables are returned to appropriate locations and waste is disposed of in accordance with workplace policy and procedures

5 Complete maintenance records

5.1 Accurate reporting of safety check results and maintenance conducted, is completed and filed in accordance with procedures, industry guidelines and statutory requirements

5.2 Clear reference in reports is made to any items that may not yet require maintenance but may affect the future working condition or safety of the mobile crane

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLIB3013A Maintain mobile cranes.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLIB3013 Maintain mobile cranes

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria on at least one occasion and include:

- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace procedures
- checking and replenishing fluids and carrying out lubrication processes
- communicating effectively with others
- completing relevant documentation
- dealing with internal and external customers
- identifying and correctly using relevant equipment
- identifying non-conformities that may compromise operational capability
- implementing contingency plans
- interpreting and following operational instructions
- modifying activities depending on operational contingencies, risk situations and environments
- monitoring work activities in terms of planned maintenance schedule
- operating and adapting to differences in equipment in accordance with standard operating procedures
- planning and prioritising own work, multi-tasking, predicting consequences and identifying improvements
- producing a comprehensive maintenance plan
- reading and interpreting relevant instructions, procedures, information and signs
- reporting and/or rectifying identified problems, faults or malfunctions promptly, in accordance with regulatory requirements and workplace procedures
- selecting and using appropriate personal protective equipment conforming to industry and work health and safety (WHS)/occupational health and safety (OHS) standards
- servicing equipment in terms of maintenance schedule and standard operating procedures
- working collaboratively with others
- working systematically with required attention to detail without injury to self, others, or damage to goods or equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and include knowledge of:

- application of relevant agreements, codes of practice or other legislative requirements
- guidelines for the safe use of machinery and equipment
- hazard management strategies consistent with the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
- mobile crane applications, capacities, configurations, safety hazards and control mechanisms
- operational crane systems and equipment
- operational safety and maintenance procedures for crane crews
- relevant WHS/OHS and environmental procedures and regulations
- relevant regulations, permit and licence requirements for mobile crane operational safety and maintenance
- use, characteristics, capabilities and limitations of lubrication and adjustment tools and equipment
- workplace procedures for planning mobile crane jobs and setting up work areas.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so. Where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions and involve the movement of equipment, goods, materials and vehicular traffic.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment include:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals, including relevant:
 - state/territory regulations pertaining to the maintenance and safety of mobile cranes
 - state/territory WHS/OHS legislation

- personal protective clothing and equipment, including:
 - gloves
 - safety headwear and footwear
 - sunscreen, sunglasses and safety glasses
 - two-way radios
 - high visibility clothing
- relevant materials, tools and equipment currently used in industry
- state/territory environmental protection legislation.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLIB3015 Undertake site inspection

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to undertake a site inspection in preparation for a lift requiring a mobile crane in accordance with licence/permit requirements and regulations, in a variety of operational contexts.

It includes arranging a site inspection, clarifying customer requirements, defining job requirements and completing necessary records.

Work is performed with general supervision, with duty of care responsibility for self and others in achieving the prescribed outcomes.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

B – Equipment Checking and Maintenance

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the Performance criteria describe the performance needed to demonstrate

essential outcomes.

achievement of the element.

1 Arrange site inspection

- 1.1 Available information about customer requirements is obtained from relevant personnel
- 1.2 Job hazards are identified and required action is taken to minimise, control or eliminate identified hazards
- 1.3 Need for site inspection is confirmed through appropriate questioning and discussion
- 1.4 Mutually acceptable meeting time is arranged with customer
- 1.5 Full customer details are recorded in accordance with workplace procedures

2 Clarify customer requirements

- 2.1 Customer needs and perception of job are clearly established through appropriate questioning and discussion
- 2.2 Alternative job methods are suggested, as required, and a safe and cost effective method is negotiated with customer
- 2.3 Client ability to provide necessary competent personnel is ascertained

3 Define job requirements

- 3.1 Information about load and movement requirements is accessed and necessary measurements are taken to enable accurate estimation of job requirements
- 3.2 Specific scheduling needs are ascertained taking into account legislative and customer requirements
- 3.3 Information from site inspection and customer is used to identify hazards and contingencies
- 3.4 Specific site and job requirements are identified
- 3.5 Lift study is arranged as required, to provide additional information to meet customer expectations
- 3.6 Necessity to be on site during lift is assessed in accordance with workplace policy, taking into consideration complexity of job, potential hazards and expertise of available personnel
- 3.7 Need for permits/authorisations is determined

4 Complete records

- 4.1 Required records are updated accurately, legibly and promptly in accordance with workplace procedures
- 4.2 All relevant information about job is included in records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLIB3015A Undertake site inspection.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLIB3015 Undertake site inspection

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace procedures
- communicating effectively with others
- completing relevant documentation
- identifying and correctly using equipment, processes and procedures
- interpreting and following operational instructions and prioritising work
- modifying activities depending on operational contingencies, risk situations and environments
- operating and adapting to differences in equipment and sites in accordance with operating procedures
- reading and interpreting relevant instructions, procedures, information and signs
- working collaboratively with others.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- application of relevant agreements, codes of practice and legislative requirements
- guidelines relating to the safe use of machinery and equipment
- hazard management consistent with the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
- mobile crane applications, capacities, configurations, safety hazards and control

mechanisms

- operational procedures for crane crews for conducting a site inspection for a lift using a mobile crane
- operational work systems and equipment
- relevant national heavy vehicle legislation and regulatory requirements
- relevant road rules, regulations, permit and licence requirements for mobile crane operation and safety
- relevant work health and safety (WHS)/occupational health and safety (OHS) and environmental procedures and regulations
- site inspection procedures and protocols.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment include:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
- relevant materials, tools, equipment and personal protective equipment currently used in industry.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLID1001 Shift materials safely using manual handling methods

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to shift loads safely using manual handling methods. Work must be carried out in compliance with the relevant work health and safety (WHS)/occupational health and safety (OHS) regulations concerning the manual handling and movement of loads.

It includes assessing the risks associated with relocating the load, planning the relocation process and carrying out the relocation in accordance with the plan.

Work is performed under some supervision generally within a team environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

D – Load Handling

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Assess risks associated with

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Products, goods or materials to be relocated are identified and assessed to determine appropriate relocation method

relocating load

- 1.2 Storage locations are determined and potential routes to be followed are identified
- 1.3 Effect of load relocation on original load base is predicted
- 1.4 Points of balance are estimated
- 1.5 Required clearances are compared to available space and adjustments are made to moving loads to reflect required clearance
- 1.6 Effects of moving contents, which may be loose, liquid, dangerous or hazardous, are considered
- 1.7 Risks in potential routes are considered
- 1.8 Risks to self are identified arising from the required lifting, load carrying, set down or movement of the goods
- 1.9 Manual handling procedures for lifting, lowering and carrying, pushing and pulling are identified
- 1.10 Team lifting processes are considered when moving loads
- 1.11 Appropriate personal protective equipment is determined
- 1.12 Size to weight ratio of items to be manually handled are identified

2 Plan load relocation

- 2.1 Relocation of the load is planned, consistent with the code of practice for manual handling and in accordance with the risk assessment
- 2.2 Process for relocating load is proposed including predicting and planning for potential difficulties
- 2.3 Proposed process is checked for compliance with code of practice and workplace procedures

3 Relocate load

- 3.1 Actions for lifting, lowering and carrying, pulling and pushing a load are in accordance with workplace procedures and WHS/OHS requirements
- 3.2 Applications appropriate for team relocation of load are identified
- 3.3 Team lifting tasks are coordinated
- 3.4 Planned process and route are followed

- 3.5 Relocated materials are set down without damage to goods, personnel or equipment and are checked for stability
- 3.6 Relocation is checked to see it meets work requirements and variance/s are reported

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLID1001A Shift materials safely using manual handling methods.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLID1001 Shift materials safely using manual handling methods

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- applying precautions and required action to minimise, control or eliminate risks that may exist when manually lifting and handling materials and goods
- applying relevant legislation and workplace procedures
- communicating effectively with others when manually lifting and handling materials and goods
- implementing contingency plans when manually lifting and handling, materials and goods
- interpreting and following operational instructions and prioritising work
- interpreting manual handling risks
- modifying activities depending on operational contingencies, risk situations and environments
- operating and adapting to differences in loads and materials in accordance with standard operating procedures
- reading and interpreting instructions, procedures and information relevant to the manual lifting and handling of materials and goods
- selecting and using required personal protective equipment conforming to industry and work health and safety (WHS)/occupational health and safety (OHS) standards
- using correct manual handling practices
- working collaboratively with others when manually lifting and handling materials and goods
- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- housekeeping standards and procedures
- relevant WHS/OHS procedures and guidelines concerning the manual lifting and movement of loads
- risks when manually lifting and handling materials and goods, and related precautions to control the risk, including:
 - controlled actions on a movement during lifting
 - distance over which load is to be shifted
 - frequency of shifting operations
 - load on the spine during lifting
 - postures and positions during lifting
 - rotation and side movement of the spine during lifting
 - time allowed for shifting the load
 - type, weight and position of the load
- work layout
- site layout and obstacles
- workplace procedures and policies for manual handling.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations, current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations, current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry
- applicable documentation including workplace procedures, regulations, codes of practice

and operation manuals.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLID2003 Handle dangerous goods/hazardous substances

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to handle dangerous goods and hazardous substances in accordance with relevant work health safety (WHS)/occupational health and safety (OHS) regulations concerning the safe handling of dangerous goods and hazardous substances, within the transport and logistics industry.

It includes identifying requirements for working with dangerous goods and/or hazardous substances, confirming site incident procedures and selecting handling techniques.

Work is performed under general supervision.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

D – Load Handling

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to

essential outcomes.

demonstrate achievement of the element.

- | | |
|---|--|
| 1 Identify requirements for working with dangerous goods and/or hazardous substances | <ul style="list-style-type: none"> 1.1 Dangerous goods/hazardous substances are identified from information including class labels, manifests and other documentation 1.2 Job hazards are identified and required action is taken to minimise, control or eliminate identified hazards 1.3 Storage requirements for dangerous goods/hazardous substances are identified and applied 1.4 Legislative requirements for dangerous goods/hazardous substances are used to plan work activities 1.5 Handling procedures for different classes and characteristics of goods are observed 1.6 Confirmation is sought from relevant personnel where dangerous goods/hazardous materials do not appear to be appropriately marked |
| 2 Confirm site incident procedures | <ul style="list-style-type: none"> 2.1 Incident reporting processes are identified 2.2 Emergency equipment is located and checked in accordance with workplace procedures and statutory regulations 2.3 Emergency procedures are identified and confirmed |
| 3 Select handling techniques | <ul style="list-style-type: none"> 3.1 Load handling and shifting procedures are selected in accordance with identified requirements for particular goods 3.2 Handling equipment is checked for conformity with workplace requirements and manufacturer guidelines 3.3 Suitable signage or placards are checked for compliance with workplace procedures, as required |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLID2003A Handle dangerous goods/hazardous substances.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLID2003 Handle dangerous goods/hazardous substances

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- communicating and working effectively with others
- completing relevant documentation
- determining required permits
- estimating weight and dimensions of load and any special requirements
- identifying and assessing handling and storage precautions and requirements for dangerous goods/hazardous substances
- identifying and selecting safety requirements for handling dangerous goods/hazardous substances
- identifying containers and goods coding, markings and emergency information panels for mode of transport storage selected
- identifying dangerous goods/hazardous substances using labels, International Maritime Dangerous Goods (IMDG) Code markings, HAZCHEM signs and other relevant identification criteria
- identifying job and site hazards, and planning work to minimise risks
- implementing contingency plans
- maintaining workplace records and documentation
- modifying activities depending on operational contingencies, risk situations and environments
- monitoring and prioritising work activities in terms of planned schedule, predicting consequences and identifying improvements
- operating and adapting to differences in equipment in accordance with standard operating procedures
- operating electronic communications equipment to required protocol
- reading, interpreting and following relevant instructions, procedures, regulations, information and signs
- recognising hazards and applying precautions and required action to minimise, control or eliminate recognised hazards
- reporting and/or rectifying identified problems, faults or malfunctions promptly, in accordance with regulatory requirements and workplace procedures

- selecting and using required personal protective equipment (PPE) conforming to industry and work health and safety (WHS)/occupational health and safety (OHS) standards
- selecting appropriate equipment and work systems including PPE
- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- equipment applications, capacities, configurations, safety hazards and control mechanisms
- housekeeping standards and procedures
- permit and licence requirements
- problems that may arise when handling of dangerous goods and hazardous substances and actions that should be taken to prevent or solve these problems
- relevant aspects of current Australian Dangerous Goods (ADG) Code and relevant Australian Standards
- relevant regulations and codes concerning handling dangerous goods/hazardous substances
- risks when handling dangerous goods/hazardous substances and related precautions to control risk
- workplace procedures for handling and storing dangerous goods/hazardous substances.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy

requirements of the work being performed and the needs of the candidate.

Resources for assessment include:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation including workplace procedures, regulations, current ADG Code, codes of practice and operation manuals
- relevant materials, tools, equipment, and personal protective equipment currently used in industry.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLIF2006 Apply accident-emergency procedures

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor word changes and reordering in Knowledge Evidence
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to apply accident-emergency procedures in accordance with work health safety (WHS)/occupational health and safety (OHS) codes of practice, regulations and workplace requirements.

It includes responding to an incident, controlling and assisting at an accident or emergency site, finalising accident-emergency processes and completing records.

Work is performed under limited supervision.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

F – Safety Management

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | |
|---|---|
| 1 Respond to an incident | 1.1 Response to incident or accident is in accordance with workplace emergency procedures and relevant regulatory requirements |
| | 1.2 Incident cause and effects details are identified and reported |
| | 1.3 Hazards are identified, risks assessed and control measures implemented |
| | 1.4 Assistance requirements for accidents and emergencies are clarified and reported immediately to appropriate parties |
| | 1.5 Requests for assistance are made to relevant personnel and emergency services |
| 2 Control and assist at accident or emergency site | 2.1 Site is controlled and protected until arrival of authorised personnel |
| | 2.2 Assistance is provided to injured persons within limitations of duty of care responsibilities and workplace procedures |
| | 2.3 Relevant authorities at the site are cooperated with and assisted in accordance with workplace policies |
| 3 Finalise accident - emergency process and complete records | 3.1 Relevant information is exchanged in accordance with state/territory law and workplace procedures |
| | 3.2 Documentation and reports are completed and processed in accordance with workplace and relevant regulatory requirements |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Unit Mapping Information

This unit replaces and is equivalent to TLIF2006A Apply accident-emergency procedures.

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLIF2006 Apply accident-emergency procedures

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor word changes and reordering in Knowledge Evidence
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- analysing work environment to identify hazards, assess safety risks and implement appropriate work health and safety (WHS)/occupational health and safety (OHS) control procedures
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace emergency response procedures
- communicating effectively with others
- completing relevant documentation
- modifying activities depending on operational contingencies, risk situations and environments
- negotiating and resolving issues when responding to an accident or an emergency
- operating electronic communications equipment to required protocol
- reading and interpreting relevant instructions, procedures and information
- reporting and/or rectifying identified problems, faults or malfunctions promptly, in accordance with regulatory requirements and workplace procedures
- selecting and appropriately applying technology, information systems and policies during a safety incident, accident or emergency
- selecting and using required personal protective equipment (PPE) conforming to industry and WHS/OHS standards
- working collaboratively with others
- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

Knowledge Evidence

- focus of operation of work systems, equipment or management, site and organisational

- operating and emergency procedures
- relevant regulatory and codes of practice requirements applicable in accident/emergency situations
- relevant WHS/OHS and environmental protection policies and procedures
- site layout
- typical problems that can occur during a safety incident, accident or emergency and related actions that can be taken
- workplace emergency, fire and accident procedures
- workplace procedures for accident-emergency response.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, equipment and PPE currently used in industry
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLIF2010 Apply fatigue management strategies

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to apply fatigue management strategies within the transport and logistics industry. Work is undertaken in compliance with relevant legislation, regulations, codes and guidelines.

It includes identifying and acting on signs of fatigue and implementing appropriate strategies to minimise fatigue during work activities, in particular when operating equipment, trains, vehicles, load shifting equipment, marine vessels and aircraft.

Work is performed under some supervision generally within a team environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

F – Safety Management

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Identify and act on signs of fatigue

1.1 Potential causes of fatigue are identified and action is taken to minimise their effects in accordance with company procedures

- 1.2 Personal warning signs of fatigue are recognised and necessary steps are taken in accordance with workplace procedures, to ensure that effective work capability and alertness are maintained
- 2 Implement strategies to minimise fatigue**
- 2.1 Workplace procedures are assessed to minimise fatigue
 - 2.2 Factors that increase the risk of fatigue-related accidents and incidents are minimised
 - 2.3 Fatigue management strategies are implemented in accordance with workplace policy
 - 2.4 Lifestyle choices are made that promote the effective long-term management of fatigue
 - 2.5 Effective practices in combating fatigue are adopted and applied
 - 2.6 Personal fatigue management strategies are communicated to relevant people
 - 2.7 Appropriate counter measures are planned to combat fatigue

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLIF2010A Apply fatigue management strategies.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLIF2010 Apply fatigue management strategies

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- adapting to changes in rosters and standard operating procedures as they relate to fatigue management
- adjusting lifestyle patterns to ensure effective fatigue management during work activities
- applying precautions and required action to minimise and control the effects of fatigue when carrying out own work functions
- applying relevant legislation and workplace procedures
- communicating effectively with others when applying fatigue management strategies
- identifying and meeting own learning needs about fatigue management related matters
- modifying activities and taking appropriate initiatives to manage fatigue in the workplace depending on work contexts, risk situations and environments
- reading and interpreting instructions, procedures, regulations and signs related to fatigue management and applying them to work activities
- recognising symptoms of fatigue and taking appropriate action in accordance with fatigue management regulations and workplace procedures
- working collaboratively with others to manage and minimise the effects of fatigue during work activities.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- causes and effects of fatigue on workers
- factors that increase fatigue-related accidents
- how fatigue affects workplace performance

- how fatigue contributes to workplace accidents
- lifestyles that promote effective long-term fatigue management
- relevant fatigue management codes, regulations, permit and licence requirements
- relevant work health and safety (WHS)/occupational health and safety (OHS) regulations as they relate to fatigue
- risks and hazards created by workplace fatigue
- sources of information on fatigue
- strategies and ways of managing fatigue
- ways of recognising fatigue
- workplace policies and procedures related to fatigue management and the control of factors that can contribute to fatigue and fatigue-related accidents.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations, current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations, current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment include:

- a range of relevant exercises, case studies and/or other simulation
- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.
-

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLIF3084 Follow mobile crane safety procedures

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to follow and apply mobile crane safety procedures, and work health and safety (WHS)/occupational health and safety (OHS) procedures when carrying out mobile crane operations.

It includes identifying and following mobile crane and workplace procedures for hazard identification and risk control, contributing to arrangements for managing WHS/OHS, and completing all relevant safety records.

Mobile crane operations are performed under some supervision generally within a team environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

F – Safety Management

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1 Follow workplace and mobile crane safety procedures for hazard identification and risk control**
 - 1.1 Mobile crane and workplace procedures for dealing with accidents, fire and emergencies are identified and followed
 - 1.2 Mobile crane and workplace procedures for WHS/OHS and related work instructions for controlling risks in a workplace are accurately followed
 - 1.3 Mobile crane hazards and site hazards in the workplace are identified and appropriate action is taken to report them and to minimise or eliminate risk to personnel, workplace and the environment
 - 1.4 Safety regulations and established mobile crane and workplace safety and hazard control practices and procedures are obtained, interpreted and applied to mobile crane operations
 - 1.5 Procedures and precautions necessary for entry into confined spaces in the workplace are correctly followed, as required
 - 1.6 Personal protective clothing and equipment is correctly used in accordance with established safety practices and procedures
 - 1.7 Established mobile crane and workplace emergency and contingency plans are followed in an emergency
- 2 Contribute to arrangements for managing mobile crane safety procedures and WHS/OHS**
 - 2.1 Mobile crane safety hazards and WHS/OHS issues are identified and raised with designated personnel in accordance with workplace procedures and relevant WHS/OHS legislation
 - 2.2 Contributions to WHS/OHS management in the workplace are made in accordance with workplace procedures and provisions of relevant legislation
 - 2.3 Participative arrangements for mobile crane safety procedures and WHS/OHS management in the workplace are contributed to within relevant workplace procedures, scope of responsibilities and own competence
- 3 Complete workplace and WHS/OHS records**
 - 3.1 Mobile crane and WHS/OHS records are completed in accordance with workplace requirements
 - 3.2 WHS/OHS records and legal requirements for

maintaining records of occupational injury and diseases are followed

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLIF3084A Follow mobile crane safety procedures.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLIF3084 Follow mobile crane safety procedures

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria on at least one occasion and include:

- applying basic fatigue management techniques
- applying mobile crane and work health and safety WHS/OHS recording procedures in accordance with workplace requirements
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation, mobile crane safety procedures and workplace procedures
- communicating effectively with others
- completing relevant documentation
- dealing with internal and external customers in large, medium, or small worksites, demolition sites and/or construction sites
- estimating the size, shape and special requirements of loads
- following procedures for identifying mobile crane safety hazards and WHS/OHS issues
- identifying containers and goods coding, Australian Dangerous Goods (ADG) Code and International Maritime Dangerous Goods (IMDG) Code markings and emergency information panels
- implementing contingency plans
- interpreting and following operational instructions and prioritising work
- modifying activities depending on operational contingencies, risk situations and environments
- monitoring work activities in terms of planned schedule
- operating and adapting to differences in equipment in accordance with standard operating procedures
- operating electronic communications equipment to required protocol
- reading and comprehending simple statements in English
- reading, interpreting and following relevant instructions, procedures, information and signs
- reporting and/or rectifying identified problems, faults or malfunctions promptly, in accordance with regulatory requirements and workplace procedures
- selecting and using required personal protective equipment conforming to industry and

WHS/OHS standards

- taking appropriate action to report identified mobile crane and site hazards in the workplace
- working collaboratively with others
- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and include knowledge of:

- hazards associated with crane operations on a demolition site
- hazards associated with mobile crane operations on a construction site
- HAZCHEM symbols and implications for safe work and storage
- housekeeping standards and procedures
- how to handle broken or damaged equipment
- lifting personnel using a workcage/workbox
- location and use of safety alarms, emergency shut-off systems, emergency communications systems
- manual and mechanically assisted lifting and load shifting procedures
- mobile crane and workplace emergency and evacuation procedures
- relevant mobile crane safety procedures
- relevant WHS/OHS procedures and guidelines
- reporting procedures for unsafe situations, fire hazards, broken or damaged equipment or fittings, sickness and accidents
- risks associated with mobile cranes, and related precautions to control the risk
- risks associated with multiple crane operations
- signs and signals used for warnings
- site layout and obstacles of container or cargo terminal or wharf
- storage and use of hazardous substances
- terms used in safety data sheets (SDSs)/material safety data sheets (MSDSs)
- transport requirements for goods within a workplace.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so. Where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions and include restricted spaces, exposed conditions and controlled or open environments.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment include:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals, including relevant:
 - Australian Standards
 - general duty of care under WHS/OHS legislation
 - mobile crane codes of practice
 - state/territory WHS/OHS legislation and safety codes, including manual handling, noise, confined spaces, smoking, workplace ergonomics
 - workplace relations regulations
 - workers' compensation regulations
- dangerous goods regulations
- personal protective equipment, including:
 - gloves
 - safety headwear and footwear
 - safety glasses
 - two-way radios
 - high visibility clothing
- relevant materials, tools and equipment currently used in industry.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLILIC0003 Licence to operate a forklift truck

Modification History

Release 1. This is a release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit specifies the skills and knowledge required to operate a forklift truck safely in accordance with all relevant legislative requirements. Competence in this unit, does not in itself result in a HRWL licence to operate this plant.

Forklift truck means a powered industrial truck equipped with lifting media made up of a mast and an elevating load carriage to which is attached a pair of fork arms or other attachments that can be raised 900 mm or more above the ground, but does not include a pedestrian-operated truck or a pallet truck.

A person performing this work is required to hold a forklift truck High Risk Work Licence (HRWL).

This unit requires a person operating a forklift truck to:

- plan for the work/task
- prepare for the work/task
- perform work/task
- pack up

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this unit of competency.

This unit is based on the licensing requirements of Part 4.5 of the Model Work Health and Safety (WHS) Regulations and meets Commonwealth, State and Territory HRWL requirements.

The National Assessment Instrument (NAI) is the mandated assessment for the HRWL to operate the relevant licencing class as detailed in this unit.

Pre-requisite Unit

Not applicable

Competency Field

LIC - Licencing Units

Unit Sector

Not applicable

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Plan work/task

- 1.1 Task requirements are identified from work orders or equivalent and confirmed with relevant people and site inspection is conducted in accordance with workplace procedures
- 1.2 Work area operating surface is assessed to determine suitability for operational use of forklift truck in accordance with workplace procedures
- 1.3 Suitability of forklift truck and attachment working load limit (WLL) is determined for the load/s and work/task requirements in accordance with manufacturer requirements and workplace procedures
- 1.4 Working area is inspected and appropriate paths for operating the forklift truck and moving and placing load/s in work area are assessed and managed in accordance with workplace procedures
- 1.5 Hazard and risk control measures are identified and reported to relevant person/s in accordance with workplace procedures
- 1.6 Traffic management plan implementation is confirmed in accordance with workplace procedures
- 1.7 Appropriate communication procedures are identified with relevant people in accordance with workplace procedures
- 1.8 All work is confirmed to ensure coverage of work/task requirements for the relevant work area is in accordance with workplace procedures

- 2 Prepare for work/task**
- 2.1** Consultation with workplace person/s is maintained to ensure workplan is clear and consistent with site requirements in accordance with safe work procedures
 - 2.2** Weather and work environmental conditions are assessed to determine any impact on forklift truck operations in accordance with manufacturer requirements and safe work procedures
 - 2.3** Risk control measures for hazards identified are checked for implementation in accordance with safe work procedures
 - 2.4** Forklift truck is accessed in a safe manner in accordance with manufacturer requirements and workplace procedures
 - 2.5** Forklift truck logbook is checked in accordance with manufacturer, regulatory requirements and safe work procedures
 - 2.6** Pre-start checks are carried out and any damage and defects are reported, recorded and appropriate action is taken in accordance with safe work procedures and manufacturer requirements
 - 2.7** Forklift truck is set up correctly with any relevant attachments as per work plan in accordance with relevant manufacturer requirements including data plate and safe work procedures
 - 2.8** Operational checks are carried out and any damage and defects are reported, recorded and appropriate action is taken in accordance with manufacturer requirements and safe work procedures
 - 2.9** Hazard and risk control measures are checked for implementation and communicated to people in the work area in accordance with safe work procedures
- 3 Perform work/task**
- 3.1** Weight and positioning of load is assessed to ensure compliance with forklift truck data plate requirements and in accordance with safe work procedures

- 3.2 Forklift truck is operated safely in accordance with manufacturer requirements and safe work procedures
 - 3.3 Loads are monitored constantly when lifting, moving, lowering and placing to ensure stability of load and avoidance of hazards in accordance with safe work procedures
 - 3.4 Unplanned and unsafe situations are responded to in accordance with safe work procedures
 - 3.5 Loads are picked up, transported and placed using all forklift truck movements in accordance with safe work procedures
 - 3.6 Forklift truck is parked, switched off and isolated appropriately in accordance with manufacturer requirements and safe work procedures
- 4 Pack Up**
- 4.1 Forklift truck shutdown procedures are carried out in accordance with manufacturer requirements and safe work procedures
 - 4.2 Forklift truck is secured to prevent unauthorised access/use in accordance with safe work procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLILIC2001 Licence to operate a forklift truck

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLILIC0003 Licence to operate a forklift truck

Modification History

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and include:

- applying safe operating procedures for a forklift truck including:
 - maintaining safe operating speed
 - travelling with load lowered to an appropriate height for the terrain, operating surface and visibility in relation to direction of travel
- applying relevant forklift truck manufacturer requirements and data plate information and approved modifications to attachments fitted are in accordance with manufacturer requirements
- carrying out pre-start checks, including visual inspection which must include:
 - battery charge as required by manufacturer requirements
 - checking and interpreting data plate/s are relevant to the attachment and the forklift truck
 - checking for signs of paint separation and stressed welds indicating potential structural weakness
 - document evidence of damage
 - engine / mechanical fluid level checks including fuel as required by manufacturer requirements
 - ensuring availability of correct forklift truck logbook and updating records as required
 - ensuring forklift truck tyres or other attachment/s are securely fitted
 - ensuring seat and mirrors are adjusted appropriately and seat belt is functional
 - fluid leaks
 - lights are working effectively
 - safety equipment checks
 - signage and labels to ensure they are visible and legible
 - wheels and tyres for damage/correct inflation if applicable
- conducting and applying risk and hazard assessment strategies including:
 - insufficient lighting
 - other specific hazards including dangerous goods
 - overhead hazards and fixed structures, roof beams and doorways
 - restricted and poorly ventilated areas

- surface suitability based on forklift truck and task requirements
- the risk of collision with people, moving plant and fixed structures
- weather conditions
- complying with Commonwealth, State and Territory Work Health and Safety (WHS)/Occupational Health and Safety (OHS)/Occupational Safety and Health (OSH) legislation, regulations safe work and workplace procedures
- conducting operational checks, which must ensure:
 - all controls are located, identified and tested for functionality
 - all hydraulic functions operated to maximum extension and ensuring attachment (if fitted) movements and control functions are smooth and comply with operating requirements
 - hazard warning systems (e.g. reversing beepers, lights and horns) are functional
 - recording and maintaining accurate information relating to forklift truck operations
 - safety devices as fitted
 - start-up is in accordance with manufacturer requirements
 - steering, transmission and brake functions comply with operating requirements
 - there are no unusual noises
- confirming and following traffic management plan procedures relevant to their role in the work area
- conducting relevant procedures for refuelling and isolating fuel/power source as per manufacturer requirements using appropriate PPE
- determining relevant lifting attachment to perform work/task
- determining lift requirements including:
 - positioning of unusually balanced/shaped loads
 - centre of gravity
 - dynamic nature of load
 - tyne/attachment positioning
 - weight
- ensuring risk control measures within the work area are effective as per workplace procedures
- identifying, isolating and tagging out defective equipment and reporting to authorised person/s
- interpreting and confirming relevant documentation, workplace instructions, safety information, emergency procedures for the work task and relevant area
- interpreting workplace procedures in relation to various environmental conditions
- maintaining communication with other workplace personnel through using worksite procedures including:
 - audible and visual warning devices
 - signage
 - two-way radio
 - verbal instructions
 - written instructions
- maintaining three points of contact whilst accessing and egressing forklift truck and ensuring

- rungs / steps are free of hazards
- operating and monitoring safe forklift truck operations using minimum 250kg dynamic and non-dynamic loads that include:
 - aligning tynes/attachment to load
 - carrying out a lift to 75% of the maximum height
 - conducting trial lift to ensure forklift truck and load are stable, and load is safe to move
 - correctly using horns and mirrors in workplace
 - correctly positioning and using an observer to assist when operating with a load that may restrict vision or be placed out of vision of the operator
 - driving applicable to conditions and moving loads safely
 - driving a forklift truck safely with load in forward and reverse, while maintaining visibility through an obstacle course including:
 - an 'S' bend with a minimum 90 degrees left and right turn
 - ensuring load/s remains stable through pick up, transport and placement
 - forklift truck speed is appropriate to load and surroundings
 - lowering dynamic and non-dynamic loads to appropriate height for travel in forward and reverse
 - picking up, driving, manoeuvring and placing dynamic and non-dynamic loads safely at various heights within a compliant racking system
 - picking up, driving, manoeuvring and placing dynamic and non-dynamic loads safely into/onto an elevated, flat, stable area
 - tilting mast (or forks if applicable) to ensure balance of load
 - using gluts/dunnage appropriately and lowering load safely
 - using tilt and side shift (where fitted) safely to manoeuvre dynamic and non-dynamic loads into allocated space
 - reporting to relevant person/s on site risk control measures that are not in place or are deficient
 - setting up an exclusion zone
 - securely parking forklift truck and isolating in appropriate position including:
 - minimising possible access by unauthorised person/s
 - tynes/attachment lowered to required position in accordance with manufacturer requirements
 - park brake applied
 - switching off, isolating fuel/power source and removing key according to workplace procedures
 - shutting down a forklift truck in accordance with manufacturer requirements and workplace procedures

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- Australian and industry standards, codes of practice and guidelines to safely operate a forklift truck
- communication procedures including:
 - audible and visual warning devices
 - hand signals
 - questioning techniques
 - signage
 - traffic warning systems
 - two-way radio
 - written instructions
- forklift truck characteristics and capabilities, manufacturer requirements and instructions for any attachments
- impact of the following on the operation of the forklift truck including:
 - failure/loss of control including brakes and steering
 - failure of equipment during forklift truck operations
 - forklift truck instability causes including:
 - deterioration of ground condition
 - overloading
 - pick up and placement of load
 - irregular loads
 - operating on ramps and uneven surfaces and in restricted spaces
 - use of forklift truck data plate and attachment data plate and appropriate methodology to determine weight of a load is appropriate for forklift truck and any attachment if fitted including the estimation or determination from:
 - labels on the actual load
 - markings on the actual load
 - paperwork such as consignment notes, running sheets and weighbridge dockets
 - weighing a carton and calculating load
- manufacturer requirements, instructions and operator's manual
- problems, and appropriate response procedures to unplanned and/or unsafe environmental conditions including:
 - wind
 - lightning
 - water/ice impacted surface/ground
 - rain
 - extreme heat
 - Ultra violet (UV) exposure
- problems and equipment faults, and implementing appropriate response procedures to unplanned and/or unsafe situations including:
 - lock out and tag out procedures
- relevant procedures for refuelling and recharging forklift truck using appropriate PPE

including:

- gas bottle
- connecting battery to charger and disconnecting battery from charger and reconnecting to forklift truck
- refuelling
- procedures for recording, reporting and maintaining workplace records and information
- risk assessment process including hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - personal protective equipment (PPE)
- safe use and compliance of different types of attachments including:
 - bale clamps
 - carpet spike for carpet rolls
 - drum carrier
 - jib attachment
 - paper roll clamps
 - personnel work platforms
 - rotators
 - slippers/fork extensions on tynes
- suitability and lifting capability of the attachment to be used
- shut down procedures for a forklift truck in accordance with manufacturer requirements
- traffic management plan procedures and requirements
- typical routine problems encountered operating a forklift truck and associated equipment, and adjustments required for correction
- workplace procedures including work plan which may be verbal, documented/written, or electronically generated
- work area operating surface suitability including issues with:
 - backfilled ground
 - bitumen (damaged, cracked)
 - concrete (damaged, cracked)
 - hard compacted soil
 - potholes
 - railway tracks
 - rough uneven or difficult terrain including sloping surfaces, uneven surfaces, steel decks and grates
 - soft soils
 - trench covers
- Work Health and Safety (WHS)/Occupational Health and Safety (OHS)/Occupational Safety

and Health (OSH) requirements, safe work and workplace procedures

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

- Simulators must not be used in the assessment of this unit of competency.

Resources for assessment must include access to:

- a suitable forklift truck that complies with AS 2359 Powered industrial trucks and is in a safe/serviceable condition in accordance with manufacturer requirements
- associated equipment for forklift truck operations
- suitable dynamic and non-dynamic loads
- suitable compliant racking system
- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry
- applicable documentation including:
 - approved codes of practice and relevant guidance material
 - relevant Australian technical standards
 - manufacturer guidelines (instructions, requirements or checklists), relevant industry standards and operating procedures (where applicable)

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLILIC0005 Licence to operate a boom-type elevating work platform (boom length 11 metres or more)

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement changes in unit Application
- Minor changes and re-ordering of Performance Evidence
- Minor re-ordering of Knowledge Evidence
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit specifies the skills and knowledge required to safely operate a boom-type Elevating Work Platform (EWP) where the length of the boom is 11 metres or more in accordance with all relevant legislative requirements. Competence in this unit, does not in itself result in a Risk Work Licence (HRWL) to operate this plant.

Boom-type elevating work platform means a telescoping device, hinged device, or articulated device, or any combination of these, used to support a platform on which personnel, equipment and materials may be elevated.

A person performing this work is required to hold a boom-type elevating work platform HRWL.

This unit requires a person operating an EWP to:

- plan for the work/task
- prepare for the work/task
- perform work/task
- pack up.

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this unit of competency.

This unit is based on the licensing requirements of Part 4.5 of the Model Work Health and Safety (WHS) Regulations and meets Commonwealth, State and Territory HRWL requirements.

The National Assessment Instrument (NAI) is the mandated assessment for the HRWL to operate the relevant licencing class as detailed in this unit.

Pre-requisite Unit

Not applicable

Competency Field

LIC - Licencing Units

Unit Sector

Not applicable

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Plan work/task

- 1.1 Task requirements are identified from work orders or equivalent and confirmed with relevant people and a site inspection is completed in accordance with workplace procedures
- 1.2 Work area ground/operating surface is assessed to determine suitability for operational use of EWP in accordance with manufacturer requirements and workplace procedures
- 1.3 EWP capabilities are established for the load/s and work/task requirements in accordance with manufacturer requirements and workplace procedures
- 1.4 Appropriate paths for operating the EWP and moving in work area are assessed and determined in accordance with workplace procedures
- 1.5 Relevant hazard and risk control measures are applied and advised to relevant person/s in accordance with workplace procedures

- 1.6** Traffic management plan implementation is confirmed in accordance with workplace procedures
 - 1.7** Appropriate communication procedures are identified, with relevant people in accordance with workplace procedures
 - 1.8** All work is confirmed to ensure coverage of work/task requirements for the relevant work area in accordance with workplace procedures
- 2 Prepare for work/task**
- 2.1** Consultation with workplace person/s is maintained to ensure workplan is clear and consistent with site requirements in accordance with workplace procedures
 - 2.2** Risk control measures for hazards identified are checked for implementation in accordance with workplace procedures
 - 2.3** Safety equipment including Personal Protective Equipment (PPE) are inspected, fitted correctly and used in accordance with manufacturer requirements and safe work procedures
 - 2.4** EWP is accessed in a safe manner in accordance with manufacturer requirements and safe work procedures
 - 2.5** Pre-start EWP checks are carried out in accordance with manufacturers requirements and safe work procedures
 - 2.6** EWP is started and is checked for any abnormal noises in accordance safe work procedures
 - 2.7** EWP is positioned correctly as per work plan in work area in accordance with relevant manufacturer requirements and safe work procedures
 - 2.8** EWP is stabilised appropriately in accordance with the workplan, relevant manufacturer requirements and safe work procedures

- 2.9** Operational checks from base controls are carried out in accordance with relevant manufacturer requirements and safe work procedures
 - 2.10** All platform controls are located, identified and tested in accordance with manufacturer requirements and safe work procedures
 - 2.11** All damage and defects are reported and appropriate action is taken to rectify in accordance with manufacturer requirements and safe work procedures
 - 2.12** EWP logbook is inspected and is correct for the EWP, is completed and signed in accordance with manufacturer requirements and safe work procedures
 - 2.13** Weather and work environmental conditions are assessed to determine any impact on EWP operation and positioning as per workplan in accordance with manufacturer requirements and safe work procedures
- 3 Perform work/task**
- 3.1** Relevant hazard prevention/control measures identified are checked for implementation in accordance with safe work procedures
 - 3.2** EWP is safely located at point of work in work area in accordance with safe work procedures
 - 3.3** EWP platform is positioned for work tasks and stability and all operations are monitored constantly in accordance with safe work procedures
 - 3.4** Work gear and tools are stowed and secured in accordance with safe work procedures
 - 3.5** EWP is operated using all movements in accordance with safe work procedures and manufacturer requirements
 - 3.6** Unplanned and unsafe situations are responded to in accordance with safe work procedures

- 3.7 All communication signals are correctly interpreted and followed whilst EWP is operated in accordance with safe work procedures
 - 3.8 EWP platform is accessed and egressed in accordance with safe work procedures and manufacturer requirements
 - 3.9 EWP is parked, switched off and isolated appropriately in accordance with manufacturer requirements and safe work procedures
- 4 Pack up**
- 4.1 Post-operational EWP checks are carried out in accordance with manufacturer requirements and safe work procedures
 - 4.2 EWP boom is retracted, lowered, stowed and secured in accordance with manufacturer requirements and safe work procedures
 - 4.3 Safety equipment and PPE is disconnected from platform in accordance with safe work procedures
 - 4.4 Relevant motion locks and brakes are applied as required in accordance with manufacturer requirements and safe work procedures
 - 4.5 Outriggers and/or stabilisers, plates or packing if fitted are stowed and secured in accordance and with manufacturer requirements and safe work procedures
 - 4.6 EWP is shut down in accordance with manufacturer requirements and safe work procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLILIC2005 Licence to operate a boom-type elevating work platform (boom length 11 metres or more)

Links

Companion Volume Implementation Guide -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLILIC0005 Licence to operate a boom-type elevating work platform (boom length 11 metres or more)

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement changes in unit Application
- Minor changes and re-ordering of Performance Evidence
- Minor re-ordering of Knowledge Evidence
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and include:

- advising relevant person/s on site in relation to any hazards and risk elimination/control strategies
- applying safe operating procedures for an Elevating Work Platform (EWP) including all functions within the safe working rated capacity including:
 - boom/s as low as possible and fully retracted whilst travelling (self propelled EWP only)
 - boom/s in line with EWP where practical whilst travelling (self propelled EWP only)
 - EWP stability
 - gently accelerating and braking to minimise boom/s swing (self propelled EWP only)
 - maintaining safe operating speed in relation to the work condition
 - travelling with work platform raised to an appropriate height for the terrain and visibility in relation to direction of travel (self propelled EWP only and in accordance with manufacturers specifications)
- applying emergency procedures
- applying traffic management plan procedures relevant to their role in the work area
- carrying out operational checks on EWP including:
 - testing of all EWP safety devices
 - all controls are located, identified and tested for functionality from the base controls and platform controls
 - hazard warning systems including travel beepers and lights are functional
 - start-up is in accordance with manufacturer requirements
 - steering, transmission and brake functions comply with operating requirements (self

- propelled EWP only)
- there are no unusual noises
- carrying out pre-start checks, including visual inspection which must include:
 - battery fluid level as required by manufacturer requirements
 - checking compliance plate is relevant to the load/s being used on the EWP
 - engine / mechanical fluid level checks as required by manufacturer requirements
 - ensuring availability of correct logbook and updating records as required
 - ensuring EWP platform and attachment/s fitted in platform are secured
 - evidence of damage
 - fluid leaks
 - lights are working effectively (where fitted)
 - safety equipment checks
 - signage and labels to ensure they are visible and legible
 - structural weaknesses including paint separation or stressed welds
 - wheels and tyres for damage/correct inflation if applicable
- checking compliance plate and load chart for reach requirements and load suitability
- clarifying workplan and checking understanding
- complying with Commonwealth, State and/or Territory work health and safety (WHS)/occupational health and safety (OHS)/occupational safety and health (OSH) legislation and regulations
- controlling and operating a boom type elevating work platform ensuring movements and control functions are safe, smooth and comply with operating requirements including:
 - any combination of the movement of the extending boom used to support a platform on which personnel, equipment and materials are elevated to perform the work task/s
 - avoidance of ground depressions
 - correctly using observer guidance of work platform, main chassis and extending boom
 - demonstrating the safe operation of an EWP in forward and reverse, while maintaining visibility (where applicable)
 - driving (where applicable) applicable to conditions and moving platform and load/s safely
 - ensuring warning devices are functioning correctly
 - interpreting directional arrows correctly on platform controls during forward, reverse, left and right
 - lowering boom to its resting position
 - monitoring platform, main chassis and extending boom movement constantly ensuring safe work procedures are followed
 - raising platform and slewing within manufacturer requirements
 - raising platform to its full extent or 75% of the maximum height capacity (whichever is greater)
 - stability of the EWP and the work platform
 - manoeuvring and positioning the platform to perform work task/s safely whilst at its full extent or a minimum height of 75% of the maximum capacity (whichever is greater)

- conducting and applying hazard identification and risk elimination or minimisation strategies including:
 - barricades and controls to prevent the risk of collision with people, moving vehicles and fixed structures
 - environmental conditions including:
 - wind
 - lightning
 - water impacted ground
 - rain
 - extreme heat
 - Ultra Violet (UV) exposure
 - ground conditions (surface and slopes) and assessing work area operating surface suitability based on machine and task requirements
 - overhead hazards including electric lines and service pipes
 - personal protective equipment (PPE)
 - restricted areas and crush points from work platform and external surroundings
 - safety related tags on electrical switches/isolators that have an impact on point of work of EWP operator
 - sufficient lighting
 - suitable area for set-up, positioning and safely operating EWP
 - suitable firm and stable operating surface
 - use of safety observer
- entering work platform correctly including:
 - lowering platform safely and stably to appropriate height to access safely
 - clipping on of fall restraint/arrest device
 - accessing platform safely
- exiting work platform correctly including:
 - lowering platform safely and stably to appropriate height to egress safely
 - unclipping of fall restraint/arrest device
 - exiting platform safely
- identifying, isolating and tagging out defective equipment and reporting to authorised person/s
- inspecting and using relevant safety equipment, including:
 - anchor point/s
 - emergency retrieval system from base controls and platform controls where fitted
 - energy absorber/s
 - lanyard/s
 - safety harness/es
- interpreting and confirming relevant documentation, workplace instructions, safety information and emergency procedures for the work task and relevant area
- interpreting workplace procedures in relation to various work environmental conditions

- maintaining communication with other workplace personnel using appropriate workplace procedures including procedures to ensure all movements are conveyed clearly and succinctly including:
 - 2-way radio
 - audible and visual warning devices
 - making and interpreting hand signals
 - questioning to confirm understanding
 - signage
 - written instructions
- recording and maintaining accurate information relating to EWP operations
- reporting to relevant person/s on site risk control measures that are not in place or deficient
- stabilising procedures for an EWP including:
 - checking levels
 - removing obstacles and obstructions
 - deploying and retracting outriggers (if fitted)
 - establishing correct size plates for packing (if required)
- shutting down a boom type EWP in accordance with manufacturer requirements and workplace procedures
- using and interpreting EWP manufacturer requirements and data, including compliance plate and load chart, to enable correct EWP selection for task including:
 - boom
 - platform
 - weight including outrigger load or wheel load.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- Australian and industry standards, codes of practice and guidelines to safely operate an EWP (boom length 11 metres or more) including:
 - nominal reach, measured horizontally from centre point of rotation to outer edge of platform in its most extended position
 - vertical distance from floor of platform to surface supporting elevating work platform with platform at its maximum height
- appropriate mathematical calculations to estimate loads ensuring EWP is not overloaded
- appropriate workplace communication procedures including:
 - 2-way radio
 - audible and visual warning devices
 - questioning techniques
 - signage
 - hand signals

- traffic warning systems
- written instructions
- compliance with permit condition requirements including:
 - from electrical supply authority
 - if operating on roads or footpaths
- EWP characteristics and capabilities, manufacturer requirements and instructions
- hazards including:
 - all ground and /or operating surface hazards
 - traffic including pedestrians, vehicles, other mobile plant and building structures
 - overhead hazards including electric lines, service pipes, doorways, roof beams, and lights
 - obstacles or obstructions
 - insufficient lighting
 - other relevant hazards
- identification and avoidance of person/s potential crush or entrapment points
- identification and avoidance of potential contact with overhead electrical conductor's
- identification and avoidance of potential contact with structures near work platform/boom or chassis
- impact of the following on the operation of the EWP including:
 - failure/loss of control including brakes and steering
 - failure of equipment including hydraulic system
 - EWP and platform instability due to:
 - deterioration of ground/operating surface condition
 - gradient of operating surface
 - overloading
 - poor load placement
 - irregular loads
 - emergency procedures and safety equipment, including the use of:
 - safety harness/es
 - energy absorbers
 - lanyard/s
 - anchor point/s
 - emergency retrieval systems
- lock out and tag out procedures
- problems, and appropriate response procedures to unplanned and/or unsafe environmental conditions
- procedures for recording, reporting and maintaining workplace records and information
- relevant manufacturer requirements and instructions
- relevant procedures for refuelling/recharging EWP using appropriate PPE
- risk assessment process including hierarchy of control:
 - elimination

- substitution
- isolation
- engineering controls
- administrative controls
- personal protective equipment (PPE)
- problems and equipment faults, and implementing appropriate response procedures to unplanned and/or unsafe situations
- procedures for shutting down a boom type EWP in accordance with manufacturer requirements
- relevant documentation requirements
- suitability and lifting capability of the EWP to be used
- traffic management plan procedures and requirements
- typical routine problems encountered operating a EWP and adjustments required for correction
- wind speed factors that affect stability of EWP as per manufacturer requirements
- work area operating surface suitability including issues with:
 - backfilled ground
 - bitumen (damaged, cracked)
 - concrete (damaged, cracked)
 - hard compacted soil
 - potholes
 - railway tracks
 - rough uneven or difficult terrain including sloping surfaces, uneven surfaces, steel decks and grates
 - soft soils
 - trench covers
- work health and safety (WHS)/occupational health and safety (OHS)/occupational safety and health (OSH) and codes of practice requirements for boom type elevating work platforms
- work plan which may be verbal, documented/written, or electronically generated

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace

conditions.

- Simulators must not be used in the assessment of this unit of competency

Resources for assessment must include access to:

- appropriate boom-type elevating work platform (boom length 11 metres or more) in a safe/serviceable condition in accordance with manufacturer requirements
- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry
- applicable documentation including:
 - approved codes of practice and relevant guidance material
 - relevant Australian technical standards
 - manufacturer guidelines (instructions, requirements or checklists), relevant industry standards and operating procedures (where applicable).

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLILIC0008 Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement changes in unit Application
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit specifies the skills and knowledge required to operate a non-slewing mobile crane with a Maximum Rated Capacity (MRC) exceeding 3 tonnes safely, in accordance with all relevant legislative responsibilities. Competence in this unit, does not in itself result in a High Risk Work Licence (HRWL) to operate this plant.

A person undertaking this unit must hold:

- a current National HRWL to perform dogging or a current certification for a specific VET course for HRWL to perform dogging that has been issued by, or on behalf of a WHS Regulator

Non-slewing mobile crane means a mobile crane incorporating a boom or jib that cannot be slewed, and includes:

- an articulated mobile crane
- a locomotive crane
- but does not include vehicle tow trucks.

A person performing this work is required to hold a non-slewing mobile crane HRWL.

This unit requires a person operating non-slewing mobile crane with an MRC exceeding 3 tonnes to:

- plan the work/task
- prepare for the work/task
- perform work/task
- pack up

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this unit of competency. This unit is based on the licensing requirements of Part 4.5 of the Model Work Health and Safety (WHS) Regulations and meets Commonwealth, State and Territory HRWL requirements.

The National Assessment Instrument (NAI) is the mandated assessment for the HRWL to operate

the relevant licencing class as detailed in this unit.

Pre-requisite Unit

Not applicable

Competency Field

LIC - Licencing Units

Unit Sector

Not applicable

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Plan work/task

- 1.1 Task requirements are identified from work orders or equivalent and a lift plan is confirmed with associated personnel and a site inspection is conducted in accordance with workplace procedures
- 1.2 Work area operating surface is confirmed to determine the quality of ground suitability for operational use of non-slewing mobile crane in accordance with workplace procedures
- 1.3 Non-slewing mobile crane rated capacity (RC) and the lifting gear Working Load Limit (WLL) are established for the load/s and work/task requirements in accordance with manufacturer requirements and workplace procedures
- 1.4 Appropriate paths for operating the mobile crane and moving and placing load/s in work area are assessed and determined in accordance with workplace procedures
- 1.5 Relevant hazard identification and risk elimination/control measures are applied and advised to associated personnel in accordance with workplace

procedures

- 1.6** Traffic management plan implementation is confirmed and followed in accordance with workplace procedures
 - 1.7** Appropriate communication procedures are identified and tested with associated personnel in accordance with workplace procedures
 - 1.8** All tasks are confirmed to ensure requirements for the relevant work area in accordance with a lift plan and workplace procedures
- 2 Prepare for work/task**
- 2.1** Consultation with workplace personnel is established and maintained to ensure lift plan is clear and consistent with site requirements in accordance with a lift plan and workplace procedures
 - 2.2** Risk control measures for hazards identified are checked for implementation in accordance with the lift plan and safe work procedures
 - 2.3** Non-slewing mobile crane is accessed safely in accordance with manufacturer requirements and safe work procedures
 - 2.4** Pre-start crane checks are carried out and any damage and defects are reported, recorded and appropriate action is taken in accordance with manufacturer requirements and safe work procedures
 - 2.5** Mobile crane is set up correctly with any lifting gear as per the lift plan in accordance with relevant manufacturer requirements including load chart/s and safe work procedures
 - 2.6** Fly jib (if fitted) is set up as required in accordance with specific manufacturer requirements and safe work procedures
 - 2.7** Operational checks are carried out and any damage and defects are reported, recorded and appropriate action is taken in accordance with manufacturer requirements and safe work procedures

- 2.8 Crane logbook is checked to confirm current compliance, is correct for the crane type, is completed and signed and required rectifications have been signed off in accordance with manufacturer requirements and safe work procedures
 - 2.9 Weather and work environment conditions are assessed to determine any impact on mobile crane operations in accordance with manufacturer requirements and safe work procedures
- 3 Perform work/task**
 - 3.1 Lifts are determined within the RC of the non slewing mobile crane in accordance with the load chart/s and lift plan
 - 3.2 Boom/jib and hook block is safely positioned over the load following directions from associated personnel in accordance with the lift plan and safe work procedures
 - 3.3 Lifting gear where required is connected to the load and used safely in accordance with the lift plan, safe work procedures and manufacturer requirements
 - 3.4 Test lift is carried out in accordance with dogging and safe work procedures
 - 3.5 Loads are transferred using relevant crane movements and tag lines as required, in accordance with lift plan and safe work procedures
 - 3.6 Load and crane movement is monitored constantly and crane is operated safely in accordance with lift plan and safe work procedures
 - 3.7 All required communication signals are correctly interpreted and followed whilst crane is operated in accordance with the lift plan and safe work procedures
 - 3.8 Load is lowered and landed safely in accordance with lift plan and safe work procedures
 - 3.9 Lifting gear is disconnected from load and crane is positioned safely and efficiently for next task in accordance with lift plan and safe work procedures
- 4 Pack Up**
 - 4.1 Crane boom/jib, lifting gear and associated equipment is stowed and secured as required in accordance with manufacturer requirements and safe work procedures

- 4.2 Relevant motion locks and brakes are applied as required in accordance with manufacturer requirements and safe work procedures
- 4.3 Crane is shut down and secured to prevent unauthorised access/use in accordance with safe work procedures
- 4.4 Post-operational crane checks are carried out in accordance with legislative responsibilities, safe work procedures and manufacturer requirements

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non -essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLILIC3006 Licence to operate a non-slewing mobile crane (greater than 3 tonnes)

Links

Companion Volume Implementation Guide -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLILIC0008 Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement changes in unit Application
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and include:

- applying relevant mathematical calculations in conjunction with lift plan and load chart, radius requirements and relevant lifting gear to perform work/task to enable crane to be configured for load including:
 - boom
 - fly-jib (where fitted)
 - line pull
 - mobiling
 - type of hook
 - side slope derations
 - articulation derations
- applying relevant crane movements including:
 - boom/jib up and down (luffing)
 - positioning and using main and auxiliary hook and lifting gear to connect to load safely
 - raise and lower hoist
 - telescope in and out
 - travel and articulating (as required)
- communicating with other workplace personnel through using appropriate worksite procedures including:
 - 2-way radio
 - listening
 - making and interpreting hand signals
 - questioning to confirm understanding
 - signage

- verbal language
- visual aids
- whistles
- written instructions
- complying with Commonwealth, state and territory Work Health and Safety (WHS)/Occupational Health and Safety (OHS)/Occupational Safety and Health (OSH) legislation and safe work procedures
- completing the pre-start check including:
 - battery power level as required by manufacturer requirements
 - engine / mechanical fluid level checks as required by manufacturer requirements
 - presence of correct logbook
 - evidence of damage
 - fluid leaks
 - lights work effectively
 - locating, identifying and confirming all controls
 - mirrors and seat are adjusted appropriately
 - safety equipment checks
 - signage and labels to ensure they are visible and legible
 - checking for signs of paint separation and stressed welds indicating potential structural weakness
 - tyres and wheels for damage/wear and correct inflation (Water/Air)
 - updating records as required
 - visual damage or equipment faults
- conducting and applying risk and hazard strategies including:
 - confirming work area operating surface suitability based on crane and task requirements
 - articulation of crane
 - dynamic loads
 - ground conditions including surface and slopes
 - impact of tyre inflation/condition
 - load swing
 - overloading
 - pick and placement of load
 - asymmetric loads
 - overhead hazards
 - restricted site/s and poorly ventilated area/s
 - risk of collision with people, moving plant and fixed structures
 - adequate lighting
 - weather conditions
- completing operational checks ensuring:
 - all controls are located, identified and tested for functionality

- all hydraulic functions are operated
- lifting gear movements and control functions are smooth and comply with lift plan
- hazard warning systems, safety, audible and visual warning devices are checked to ensure they are functional including:
 - reversing beepers
 - lights
 - horns
 - crane computer alarm (where fitted)
 - anti-two block alarms (where fitted)
- start-up is in accordance with manufacturer requirements and workplace procedures
- there are no unusual noises
- steering, transmission and brake functions comply with operating requirements
- confirming and following traffic management plan procedures relevant to crane operator role in the work area
- determining any defects or faults with operation of crane and reporting to relevant person/s
- ensuring risk control measures within the work area are effective as per workplace procedures
- ensuring stability of load and avoidance of hazards by applying best mobile practice including:
 - allowing for boom deflection
 - boom/jib as low as possible
 - boom/jib in line with crane
 - carrying load near to ground surface
 - crane stability whilst manoeuvring load into position with drive/steering wheels and articulating as required
 - gently accelerating and braking to minimise load swing
 - lowering load safely and stably onto appropriate dunnage taking into consideration swing and restrictions of area
 - minimum boom/jib length
 - minimum speed
 - using handheld taglines/bridling
- following directions of dogger or rigger
- interpreting and confirming relevant documentation for the work task and relevant area
- inputting crane configuration into crane computer (where fitted) and checking operation to accurately reflect crane configuration
- interpreting and acting on communications signals including:
 - hoist down - hand and whistle and radio
 - hoist up - hand and whistle and radio
 - luff boom down - hand and whistle and radio
 - luff boom up - hand and whistle and radio
 - articulate left - hand and whistle and radio

- articulate right - hand and whistle and radio
- stop - hand and whistle and radio
- telescope in - hand and whistle and 2-way radio (where manufacturer requirements allow)
- telescope out - hand and whistle and 2-way radio (where manufacturer requirements allow)
- travel - hand and radio
- maintaining three points of contact whilst accessing crane and ensure rungs / steps are free of hazards
- monitoring load disconnection from hook is safe and ensuring no movement of controls
- observing relevant communication signals from relevant person
- operating an articulated non-slewing mobile crane with a rated capacity (RC) of 12 tonnes or greater to lift four different loads using the main hook through an obstacle course using all crane operational controls while the load is in full view of the crane operator. Loads must consist of:
 - a load of >50% of the Rated Capacity (RC) of the crane with a boom length of >75%, and
 - a round load with a minimum diameter of 300 mm and minimum length of 3 m that requires a dogger to sling, and
 - an asymmetrical load that requires a dogger to sling, and
 - travelling with a load of stillage containing at least ten scaffolding standards or containing a load of steel pipes of equivalent weight that requires a dogger to sling and a boom length of <75%
- positioning the non-slewing mobile crane for safe operation for:
 - application of the task
 - manoeuvring in the workplace
 - aligning of crane boom to the load
 - stability of the non-slewing mobile crane and the load whilst driving to load set down position
- recording and maintaining accurate information relating to crane operations
- reporting to relevant person/s on site risk control measures that are not in place or deficient
- setting up of:
 - fly jib (where fitted)
 - manual boom section (where fitted)
- setting up and validating an exclusion zone
- shutting down a non-slewing mobile crane in accordance with manufacturer requirements and workplace procedures
- stabilising a non-slewing mobile crane for operation by ensuring level and articulation (if required) is checked and within deration load chart requirements
- test-lifting load just clear of lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure:
 - slinging is correct
 - all crane equipment is functioning properly
 - load centre of gravity is correct

- loads of unusual shape or weight distribution are correctly slung
- test-lifting load just clear of lifting plane to allow for checks of crane computer (where fitted) to ensure:
 - load measuring equipment can be used to verify calculated weight of load
 - near capacity loads do not overload crane

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- appropriate worksite communication procedures including:
 - listening
 - hand signals
 - questioning techniques
 - signage
 - two-way radios
 - written instructions
 - whistles
- crane configuration mathematical calculations to:
 - estimate loads
 - establish counterweight/s requirements (where fitted)
 - radius requirements
 - relevant lifting gear to perform work/task
- characteristics and impact of factors affecting non-slewing mobile crane stability whilst mobilising loads including:
 - side slope derations
 - articulation derations of crane
 - correct tyre pressure (inflation/condition)
 - driving safely on roadways
 - pick up and carry the load
- crane and lifting gear load chart/s and manufacturer requirements
- lift impacting factors including:
 - centre of gravity
 - dynamic nature of load
 - deflection of boom
 - length
 - radius of lift
 - weight
 - side slope derations
 - articulation derations of crane

- tyre inflation pressures
- hazards including:
 - pack up and crane stability, crane tipping and demolition sites
 - ground stability including ground condition, recently filled trenches and slopes
 - insufficient lighting
 - obstacles or obstruction
 - catching load swing appropriately
 - other specific hazards and dangerous materials
 - overhead hazards including:
 - electric lines
 - service pipes
 - fixed structures
 - Vegetation (Trees)
 - traffic including pedestrians, vehicles and other plant
 - operations on unusual, uneven or difficult terrains
- impact of factors affecting non-slewing mobile crane stability including:
 - overloading
 - pick up and placement of load
 - unbalanced loads
 - articulation of crane
 - correct tyre pressures (inflation/condition)
 - side slope derations
- manufacturer requirements and instructions on shutting down and packing up crane
- mobile non-slewing crane characteristics and capabilities to allow crane configuration to suit a range of loads
- relevant workplace instructions, safety information, emergency procedures
- relevant documentation requirements and procedures for recording, reporting and maintaining workplace records and information
- risk assessment management and mitigation strategies including hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - personal protective equipment (PPE)
- roles and responsibilities of duty holders as per legislative obligations of Work Health and Safety (WHS)/Occupational health and Safety (OHS)/Occupational Safety and Health (OSH) requirements and safe work/workplace procedures
- prestart and operational checks required for a non-slewing mobile crane
- starting procedure of crane as per manufacturer requirements
- set up of:

- jib
- fly jib (where fitted)
- manual boom section (where fitted)
- weather bureau forecasts and environmental conditions that could impact operation
- workplace standards, requirements, policies and procedures for conducting operations for the mobile non-slewing crane
- problems and applying appropriate response procedures to unplanned and/or unsafe situations and environmental conditions
- work area suitability based on relevant ground reports including:
 - backfilled ground
 - bitumen
 - concrete
 - hard compacted soil
 - pre-contaminated soils
 - rock
 - rough uneven ground
 - soft soils

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

- Simulators must not be used in the assessment of this unit of competency.

Resources for assessment must include access to:

- non-slewing articulated mobile crane with an MRC 12 tonnes or greater in safe/serviceable working order in accordance with manufacturer specifications
- appropriate loads as outlined in the performance evidence requirements
- associated personnel to sling and direct loads including:
 - dogger or rigger
- communications equipment including:
 - two-way radios
 - whistles

- personal protective equipment (PPE)
- relevant documentation for operating a non-slewing mobile crane over 3 tonnes including:
 - approved codes of practice and relevant guidance material
 - relevant Australian technical standards
 - manufacturer guidelines (instructions, requirements or checklists), relevant industry standards and operating procedures (where applicable).

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLILIC0010 Licence to operate a slewing mobile crane (up to 20 tonnes)

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement changes in unit Application
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit specifies the skills and knowledge required to safely operate a slewing mobile crane with a maximum rated capacity (MRC) up to 20 tonnes, in accordance with all relevant legislative responsibilities. Competence in this unit, does not in itself result in a High Risk Work Licence (HRWL) to operate this plant.

A person undertaking this unit must hold:

- a current National HRWL to perform dogging or a current certification for a specific VET course for HRWL to perform dogging that has been issued by, or on behalf of a WHS Regulator.

Slewing mobile crane means a mobile crane incorporating a boom or jib that can be slewed, but does not include:

- a front-end loader or
- a backhoe or
- an excavator or
- other earth moving equipment, when configured for crane operation.

A person performing this work is required to hold a slewing mobile crane with an MRC up to 20 tonnes high risk work (HRW) licence.

This unit requires a person operating a slewing mobile crane with an MRC up to 20 tonnes to:

- plan for the work/task
- prepare for the work/task
- perform work/task
- pack up

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this unit of competency.

This unit is based on the licensing requirements of Part 4.5 of the Model Work Health and Safety (WHS) Regulations and meets Commonwealth, State and Territory HRWL requirements.

The National Assessment Instrument (NAI) is the mandated assessment for the HRWL to operate the relevant licencing class as detailed in this unit.

Pre-requisite Unit

Not applicable

Competency Field

LIC - Licencing Units

Unit Sector

Not applicable

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan work/task

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 Task requirements are identified from work orders or equivalent and a lift plan is confirmed with associated personnel and a site inspection is conducted in accordance with workplace procedures
- 1.2 Work area operating surface is confirmed to determine ground suitability for operational use of mobile crane in accordance with workplace procedures
- 1.3 Mobile crane rated capacity (RC) and the lifting gear Working Load Limit (WLL) are established for the load/s and work/task requirements in accordance with manufacturer requirements and workplace procedures
- 1.4 Appropriate paths for operating the mobile crane and moving and placing load/s in work area are assessed and determined in accordance with workplace procedures
- 1.5 Relevant hazard identification and risk elimination/control measures are applied and advised to associated personnel in accordance with workplace procedures

- 1.6** Traffic management plan implementation is confirmed in accordance with workplace procedures
 - 1.7** Appropriate communication procedures are identified with associated personnel in accordance with workplace procedures
 - 1.8** All crane and lifting operations are confirmed to ensure relevant work area requirements are correct in accordance with a lift plan and workplace procedures
- 2 Prepare for work/task**
- 2.1** Consultation with workplace personnel is established and maintained to ensure lift plan is clear and consistent with site requirements in accordance with a lift plan and workplace procedures
 - 2.2** Risk control measures for hazards identified are checked for implementation in accordance with the lift plan and safe work procedures
 - 2.3** Mobile crane is accessed safely in accordance with manufacturer requirements and safe work procedures
 - 2.4** Pre-start mobile crane checks are carried out and any damage and defects are reported, recorded and appropriate action is taken in accordance with manufacturer requirements and safe work procedures
 - 2.5** Mobile crane is set up correctly with any lifting gear as and stabilised as per the lift plan in accordance with relevant manufacturer requirements including load chart/s and safe work procedures
 - 2.6** Fly jib is set up as required in accordance with specific manufacturer requirements and safe work procedures
 - 2.7** Operational checks are carried out and any damage and defects are reported, recorded and appropriate action is taken in accordance with manufacturer requirements and safe work procedures
 - 2.8** Crane logbook is checked to confirm current compliance, is correct for the crane type, is completed and signed and required rectifications have been signed off in accordance with manufacturer requirements and safe work procedures

- 2.9** Weather and work environment conditions are assessed to determine any impact on mobile crane operations in accordance with manufacturer requirements and safe work procedures
- 3 Perform work/task**
- 3.1** Lifts are determined within the RC of the mobile crane in accordance with the load chart/s and lift plan
- 3.2** Boom/jib and hook block is safely positioned over the load following directions from associated personnel in accordance with the lift plan and safe work procedures
- 3.3** Main hook including any lifting gear, where required are connected to the load and used safely in accordance with the lift plan, safe work procedures and manufacturer requirements
- 3.4** Test lift is carried out in accordance with dogging and safe work procedures
- 3.5** Loads are transferred using relevant crane movements and tag lines as required, in accordance with lift plan and safe work procedures
- 3.6** Load and crane movement is monitored constantly and crane is operated safely in accordance with lift plan and safe work procedures
- 3.7** All required communication signals are correctly interpreted and followed whilst crane is operated in accordance with the lift plan and safe work procedures
- 3.8** Load is lowered and landed safely in accordance with lift plan and safe work procedures
- 3.9** Lifting gear is positioned for safe disconnection from the load and crane is positioned for next task in accordance with lift plan and safe work procedures
- 4 Pack up**
- 4.1** Crane boom/jib, lifting gear and associated equipment is stowed and secured as required in accordance with manufacturer requirements and safe work procedures
- 4.2** Crane fly jib is removed to storage position and secured as required in accordance with manufacturer requirements and safe work procedures
- 4.3** Relevant motion locks and brakes are applied as required in accordance with manufacturer requirements

and safe work procedures

- 4.4** Outriggers, plates and/or packing are stowed and secured in accordance with manufacturer requirements and safe work procedures
- 4.5** Crane is shut down and secured to prevent unauthorised access/use in accordance with safe work procedures
- 4.6** Shut down crane checks are carried out in accordance with safe work procedures and manufacturer requirements

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non -essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLILIC3008 Licence to operate a slewing mobile crane (up to 20 tonnes)

Links

Companion Volume Implementation Guide -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLILIC0010 Licence to operate a slewing mobile crane (up to 20 tonnes)

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement changes in unit Application
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and include:

- applying relevant mathematical calculations in conjunction with lift plan and load chart to determine radius requirements and relevant lifting gear to perform work/task to enable crane to be configured for load including:
 - boom
 - counterweight/s
 - fly-jib
 - line pull
 - outrigger positioning
 - type of hook
- applying relevant crane movements including:
 - boom/jib up and down (luffing)
 - catching load swing appropriately
 - positioning and using main and auxiliary hook and lifting gear to connect to load safely
 - raise and lower hoist
 - slew boom/jib
 - telescope in and out (where manufacturer requirements allow)
 - travel
- carrying out operational checks ensuring:
 - all controls are located, identified and tested for functionality
 - all hydraulic functions are operated
 - lifting gear movements and control functions are smooth and comply with lift plan
 - hazard warning systems, safety, audible and visual warning devices are checked for to ensure they are functional including:

- reversing beepers
- lights
- horns
- crane computer alarm (where fitted)
- anti-two block alarms (where fitted)
- start-up is in accordance with manufacturer requirements and safe work procedures
- there are no unusual noises
- steering, transmission and brake functions comply with operating requirements
- conducting and applying risk and hazard assessment strategies including:
 - confirming work area operating surface suitability based on crane and task requirements
 - dynamic loads
 - load swing
 - overloading
 - pick and placement of load
 - tyre pressures or track condition
 - asymmetric loads
 - overhead hazards
 - restricted and poorly ventilated areas
 - risk of collision with people, moving plant and fixed structures
 - adequate lighting
 - weather conditions
- complying with Commonwealth, state and territory Work Health and Safety (WHS)/Occupational Health and Safety (OHS)/Occupational Safety and Health (OSH) legislation and safe work procedures
- communicating with other associated personnel through using appropriate workplace procedures which including:
 - 2-way radio
 - active listening
 - demonstrating and interpreting hand signals
 - questioning to confirm understanding
 - signage/visual aids
 - whistles
 - written instructions
- completing the pre-start check including:
 - boom wiring harness connection
 - engine / mechanical fluid level checks as required by manufacturer requirements
 - ensure rungs / steps are free of hazards
 - fire extinguisher
 - fluid leaks
 - lights work effectively

- locating, identifying and confirming all controls
- mirrors and seat are adjusted appropriately for the operator
- presence of correct logbook
- safety equipment checks
- signage and labels to ensure they are visible and legible
- checking for signs of paint separation and stressed welds indicating potential structural weakness
- tyres and wheels for damage/wear and correct inflation
- updating records as required
- visual damage or equipment faults
- confirming and following traffic management plan procedures relevant to their role in the work area
- determining any defects or faults with operation of crane, recording in relevant documentation and reporting to relevant person/s
- ensuring risk control measures within the work area are effective as per safe work procedures
- following directions of dogger or rigger
- inputting crane configuration into crane computer (where fitted) and checking operation to accurately reflect crane configuration
- interpreting and acting on communications signals including:
 - hoist down - hand and whistle and 2-way radio
 - hoist up - hand and whistle and 2-way radio
 - luff boom down - hand and whistle and 2-way radio
 - luff boom up - hand and whistle and 2-way radio
 - slew left - hand and whistle and 2-way radio
 - slew right - hand and whistle and 2-way radio
 - stop - hand and whistle and 2-way radio
 - telescope in - hand and whistle and 2-way radio (where manufacturer requirements allow)
- telescope out - hand and whistle and 2-way radio (where manufacturer requirements allow)
- interpreting and confirming relevant documentation for the work task and relevant area
- maintaining three points of contact whilst accessing crane
- monitoring load disconnection from hook is safe and ensuring no movement of crane operational controls
- operating a slewing mobile crane configured to a rated capacity (RC) of between 7tonne and up to 20tonne to lift and move four different loads using the main hook through an obstacle course including a 180-degree minimum slew using all crane operational controls while the load is in full view of the crane operator. Loads must consist of:
 - a load of >50% of the Rated Capacity (RC) of the crane with a boom length of >75%, and
 - stillage containing at least ten scaffolding standards or containing a load of steel pipes of equivalent weight that requires a dogger to sling, and
 - an asymmetric load that requires a dogger to sling, and
 - a round load with a minimum diameter of 300 mm and minimum length of 3 m that requires a dogger to sling

- positioning the mobile crane for safe operation for:
 - application of the task/s
 - manoeuvring in the workplace
 - the stability of the mobile crane and the load
- recording and maintaining accurate information relating to crane operations
- reporting to relevant person/s on workplace control measures that are not in place or deficient
- setting up and validating an exclusion zone as per the lift plan
- shutting down a slewing mobile crane in accordance with manufacturer requirements and safe work procedures
- stabilising a slewing mobile crane for operation by:
 - correctly positioning plates or packing
 - deploying outriggers
 - establishing correct size plates or packing in accordance with the lift plan
 - levels are checked
- test-lifting load just clear of lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure:
 - slinging is correct
 - all crane equipment is functioning properly
 - load centre of gravity is correct
 - loads of unusual shape or weight distribution are correctly slung
- test-lifting load just clear of lifting plane to allow for checks of crane computer (where fitted) to ensure:
 - load measuring equipment can be used to verify calculated weight of load
 - near capacity loads do not overload crane

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- appropriate workplace communication procedures including:
 - listening
 - hand signals
 - questioning techniques
 - signage
 - two-way radios
 - written instructions
 - whistles
- crane configuration mathematical calculations to:
 - estimate loads
 - radius requirements

- relevant lifting gear to perform work/task
- characteristics and impact of factors affecting non-slewing articulated mobile crane stability whilst mobilising loads compared to slewing crane including:
 - articulation of crane
 - correct tyre pressure (inflation/condition)
 - driving safely on public and private roadways
 - unique handling characteristics of a mobile articulated crane and the emergency procedures in the event of loss of control as per manufacturer recommendations
 - pick up and carry the load
 - side slope derations
- characteristics and impact of factors affecting vehicle loading crane stability whilst mobilising loads compared to slewing crane including:
 - correct tyre pressure (inflation/condition)
 - emergency procedures in the event of incident
 - position of operator
 - use of stabilizers
- characteristics and impact of factors affecting reach stacker stability whilst mobilising loads compared to slewing crane including:
 - correct tyre pressure (inflation/condition)
 - driving safely on road ways
 - emergency procedures in the event of incident
 - impact of boom height and steering on stability
 - use of stabilizers
- crane, lifting gear load chart/s and manufacturer requirements
- lift impacting factors including:
 - centre of gravity
 - dynamic nature of load
 - flex/deflexion of boom
 - length of load
 - radius of boom during lift
 - weight
- set up of:
 - jib
 - fly jib
- hazards including:
 - erection and pack up
 - crane stability
 - ground stability and condition including recently filled trenches and slopes
 - insufficient lighting
 - obstacles or obstruction

- other specific hazards and dangerous materials
- overhead hazards including:
 - electric lines
 - service pipes
 - structures
 - vegetation (trees)
- traffic including pedestrians, vehicles and other plant
- operations on unusual, uneven or difficult terrains
- manufacturer requirements on outrigger procedures
- manufacturer requirements and instructions on shutting down and packing up crane
- mobile slewing crane characteristics and capabilities to allow crane configuration to suit a range of loads
- relevant workplace instructions, safety information, emergency procedures
- relevant documentation requirements and procedures for recording, reporting and maintaining workplace records and information
- risk assessment management and mitigation strategies including hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - personal protective equipment (PPE)
- roles and responsibilities of duty holders as per legislative obligations of Work Health and Safety (WHS)/Occupational Health and Safety (OHS)/Occupational Safety and Health (OSH) requirements, safe work and workplace procedures
- prestart and operational checks required for a slewing mobile crane
- weather bureau forecasts and environmental conditions that could impact operation including:
 - lightning
 - wind
 - water impacted ground
 - Ultra Violet (UV) exposure
- problems and appropriate response procedures to unplanned and/or unsafe situations and environmental conditions
- stability of load and avoidance of hazards using best crane practice including:
 - allowing for boom deflection
 - boom/jib as low as possible
 - carrying load near to ground surface
 - crane stability
 - gently accelerating and braking on slew/boom to minimise load swing
 - lowering load safely onto appropriate dunnage taking into consideration swing and

- restrictions of area
- minimum boom/jib length
- minimum speed
- using handheld taglines as required
- identification of incorrect sling of load
- starting procedure of crane as per manufacturer requirements
- workplace standards, requirements, policies and procedures for conducting safe work operations for the mobile slewing crane
- work area suitability based on relevant ground reports including:
 - backfilled ground
 - bitumen
 - concrete
 - hard compacted soil
 - pre-contaminated soils
 - rock
 - rough uneven ground
 - soft soils

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

- Simulators must not be used in the assessment of this unit of competency.

Resources for assessment that must include access to:

- slewing mobile crane with a Maximum Rated Capacity (MRC) of between 7 tonnes to 20 tonnes in safe/serviceable working order in accordance with manufacturer specifications
- appropriate loads as outlined in the performance evidence requirements
- appropriate personnel to sling and direct loads including:
 - dogger or rigger
- communications equipment including:
 - two-way radios
 - whistles

- relevant personal protective equipment (PPE)
- relevant documentation for operating a slewing mobile crane with a MRC up to 20 tonnes including:
 - approved codes of practice and relevant guidance material
 - relevant Australian technical standards
 - manufacturer guidelines (instructions, requirements or checklists), relevant industry standards and operating procedures (where applicable).

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLILIC0013 Licence to operate a slewing mobile crane (up to 60 tonnes)

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement changes in unit Application
- Minor statement changes in Assessment Conditions.

Release 1. This is a new release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit specifies the skills and knowledge required to safely operate a slewing mobile crane with a Maximum Rated Capacity (MRC) up to 60 tonnes, in accordance with all relevant legislative responsibilities. Competence in this unit, does not in itself result in a High Risk Work Licence (HRWL) to operate this plant.

A person undertaking this unit must hold:

- a current National HRWL to perform dogging or a current certification for a specific VET course for HRWL to perform dogging that has been issued by, or on behalf of a WHS Regulator.

Slewing mobile crane means a mobile crane incorporating a boom or jib that can be slewed, but does not include:

- a front-end loader or
- a backhoe or
- an excavator or
- other earth moving equipment, when configured for crane operation.

A person performing this work is required to hold a slewing mobile crane with an MRC up to 60 tonnes HRWL.

This unit requires a person operating a slewing mobile crane with an MRC up to 60 tonnes to:

- plan for the work/task
- prepare for the work/task
- perform work/task
- pack up

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this unit of competency.

This unit is based on the licensing requirements of Part 4.5 of the Model Work Health and Safety (WHS) Regulations and meets Commonwealth, State and Territory HRWL requirements.

The National Assessment Instrument (NAI) is the mandated assessment for the HRWL to operate the relevant licencing class as detailed in this unit.

Pre-requisite Unit

Not applicable

Competency Field

LIC - Licencing Units

Unit Sector

Not applicable

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan work/task

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 Task requirements are identified from work orders or equivalent and a lift plan is confirmed with associated personnel and a site inspection is conducted in accordance with workplace procedures
- 1.2 Work area operating surface is confirmed to determine ground suitability for operational use of mobile crane in accordance with lift plan, safe work and workplace/s procedures
- 1.3 Mobile crane rated capacity (RC) and the lifting gear Working Load Limit (WLL) are established and suitable for the load/s and work/task requirements in accordance with manufacturer requirements and workplace procedures
- 1.4 Appropriate paths for operating the mobile crane and moving and placing load/s in work area are assessed and determined in accordance with workplace procedures
- 1.5 Relevant hazard identification and risk elimination/control measures are applied and advised to associated personnel in accordance with workplace

procedures

- 1.6** Traffic management plan implementation is confirmed in accordance with workplace procedures
 - 1.7** Appropriate communication procedures are identified with associated personnel in accordance with workplace procedures
 - 1.8** All crane and lifting operations are confirmed to ensure relevant work area requirements are correct in accordance with a lift plan and workplace procedures
- 2 Prepare for work/task**
- 2.1** Consultation with workplace personnel is established and maintained to ensure all crane and lifting operations are clear and consistent with site requirements in accordance with a lift plan and workplace procedures
 - 2.2** Risk control measures for hazards identified are checked for implementation in accordance with the lift plan and safe work procedures
 - 2.3** Mobile crane is accessed safely in accordance with manufacturer requirements and safe work procedures
 - 2.4** Pre-start mobile crane checks are carried out and any damage and defects are reported, recorded and appropriate action is taken in accordance with manufacturer requirements and safe work procedures
 - 2.5** Mobile crane is set up correctly with any lifting gear and stabilised as per the lift plan in accordance with relevant manufacturer requirements including load chart/s and safe work procedures
 - 2.6** Counterweight/s are set up as required in accordance with the lift plan, relevant manufacturer requirements and safe work procedures
 - 2.7** Fly jib and/or luffing fly are set up as required in accordance with specific manufacturer requirements and safe work procedures
 - 2.8** Operational checks are carried out and any damage and defects are reported, recorded and appropriate action is taken in accordance with manufacturer requirements and safe work procedures

- 2.9** Crane logbook is checked to confirm current compliance, is correct for the crane type, is completed and signed and required rectifications have been signed off in accordance with manufacturer requirements and safe work procedures
- 2.10** Weather and work environment conditions are assessed to determine any impact on mobile crane operations in accordance with manufacturer requirements and safe work procedures
- 3 Perform work/task**
- 3.1** Lifts are determined to be within the RC of the mobile crane in accordance with the load chart/s and lift plan
- 3.2** Boom/jib and hook block is safely positioned over the load following directions from associated personnel in accordance with the lift plan and safe work procedures
- 3.3** Main and/or auxiliary hook including any lifting gear, where required are connected to the load and used safely in accordance with the lift plan, safe work procedures and manufacturer requirements
- 3.4** Test lift is carried out in accordance with dogging and safe work procedures
- 3.5** Loads are transferred using relevant crane movements and tag lines as required, in accordance with lift plan and safe work procedures
- 3.6** Load and crane movement is monitored constantly and crane is operated safely in accordance with lift plan and safe work procedures
- 3.7** All required communication signals are correctly interpreted and followed whilst crane is operated in accordance with the lift plan and safe work procedures
- 3.8** Load is lowered and landed safely in accordance with lift plan and safe work procedures
- 3.9** Lifting gear is positioned for safe disconnection from the load and crane is positioned for next task in accordance with lift plan and safe work procedures
- 4 Pack up**
- 4.1** Crane boom/jib, lifting gear and associated equipment is stowed and secured as required in accordance with manufacturer requirements and safe work procedures

- 4.2 Crane fly jib and/or luffing fly and counterweight/s is removed to storage position and secured as required in accordance with manufacturer requirements and safe work procedures
- 4.3 Relevant motion locks and brakes are applied as required in accordance with manufacturer requirements and safe work procedures
- 4.4 Outriggers, plates and/or packing are stowed and secured in accordance with manufacturer requirements and safe work procedures
- 4.5 Crane is shut down and secured to prevent unauthorised access/use in accordance with safe work procedures
- 4.6 Shut down crane checks are carried out in accordance with safe work procedures and manufacturer requirements

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non -essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLILIC4009 Licence to operate a slewing mobile crane (up to 60 tonnes)

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLILIC0013 Licence to operate a slewing mobile crane (up to 60 tonnes)

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement changes in unit Application
- Minor statement changes in Assessment Conditions.

Release 1. This is a new release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and must include:

- applying relevant mathematical calculations in conjunction with lift plan and load chart to determine radius requirements and relevant lifting gear to perform work/task to enable crane to be configured for load including:
 - boom
 - counterweight/s
 - fly-jib
 - line pull
 - outrigger positioning
 - type of hook
- applying relevant crane movements in crane operations including:
 - boom/jib up and down (luffing)
 - catching load swing appropriately
 - positioning and using main and auxiliary hook and lifting gear to connect to load safely
 - raise and lower hoist
 - slew boom/jib
 - telescoping in and out (where manufacturer requirements allow)
- conducting and applying hazard and risk assessment strategies including:
 - adequate lighting
 - asymmetric loads
 - confirming work area operating surface suitability based on crane and task requirements
 - dynamic loads
 - lifting and placing load
 - load swing

- overhead hazards
- overloading
- restricted and poorly ventilated areas
- risk of collision with people, moving plant and fixed structures
- tyre pressures or track condition
- weather conditions
- complying with Commonwealth, state and territory Work Health and Safety (WHS)/Occupational Health and Safety (OHS)/Occupational Safety and Health (OSH) legislation and safe work procedures
- communicating with other associated personnel through using appropriate workplace procedures which including:
 - 2-way radio
 - demonstrating and interpreting hand signals
 - questioning to confirm understanding
 - signage/visual aids
 - whistles
 - written instructions
- conducting the pre-start checks including:
 - boom wiring harness connection (where fitted)
 - checking for signs of paint separation and stressed welds indicating potential structural weakness
 - engine / mechanical fluid level checks as required by manufacturer requirements
 - ensure rungs / steps are free of hazards
 - fire extinguisher
 - fluid leaks
 - lights work effectively
 - locating, identifying and confirming all controls
 - mirrors and seat are adjusted appropriately for the operator
 - presence of correct logbook
 - safety equipment checks
 - signage and labels to ensure they are visible and legible
 - tyres and wheels for damage/wear and correct inflation
 - updating records as required
 - visual damage or equipment faults
- conducting operational checks ensuring:
 - all controls are located, identified and tested for functionality
 - all hydraulic functions are operated
 - hazard warning systems, safety, audible and visual warning devices are checked for to ensure they are functional including:
 - reversing beepers

- lights
- horns
- crane computer alarm (where fitted)
- anti-two block alarms (where fitted)
- confirming and following traffic management plan procedures relevant to their role in the work area
- lifting gear movements and control functions are smooth and comply with lift plan
- start-up is in accordance with manufacturer requirements and safe work procedures
- steering, transmission and brake functions comply with operating requirements
- there are no unusual noises
- determining any defects or faults with operation of crane, recording in relevant documentation and reporting to relevant person/s
- ensuring risk control measures within the work area are effective as per safe work procedures
- following directions of dogger or rigger
- inputting crane configuration into crane computer (where fitted) and checking operation to accurately reflect crane configuration
- interpreting and confirming relevant documentation for the work task and relevant area
- interpreting and acting on communications signals including:
 - hoist down - hand and whistle and 2-way radio
 - hoist up - hand and whistle and 2-way radio
 - luff boom down - hand and whistle and 2-way radio
 - luff boom up - hand and whistle and 2-way radio
 - slew left - hand and whistle and 2-way radio
 - slew right - hand and whistle and 2-way radio
 - stop - hand and whistle and 2-way radio
 - telescope in - hand and whistle and 2-way radio (where manufacturer requirements allow)
 - telescope out - hand and whistle and 2-way radio (where manufacturer requirements allow)
- monitoring load disconnection from hook is safe and ensuring no movement of crane operational controls
- maintaining three points of contact whilst accessing crane
- operating a slewing mobile crane configured with at least four parts of line greater than 20tonne and up to 60tonne to lift and move four different loads using the main hook through an obstacle course including a 180-degree minimum slew using all crane operational controls while the load is in full view of the crane operator. Loads must consist of:
 - a load of >50% of the Rated Capacity (RC) of the crane with a boom length of >75%, and
 - stillage containing at least ten scaffolding standards or containing a load of steel pipes of equivalent weight that requires a dogger to sling, and
 - an asymmetric load that requires a dogger to sling, and
 - a round load with a minimum diameter of 300 mm and minimum length of 3 m that requires a dogger to sling
- positioning the mobile crane as per the lift plan for safe operation for:

- application of the task/s
- manoeuvring in the workplace
- the stability of the mobile crane and the load
- recording and maintaining accurate information relating to crane operations
- reporting to relevant person/s on workplace control measures that are not in place or deficient
- setting up and validating an exclusion zone as per the lift plan
- shutting down a slewing mobile crane in accordance with manufacturer requirements and safe work procedures
- stabilising a slewing mobile crane for operation by:
 - correctly positioning plates or packing
 - deploying outriggers
 - establishing correct size plates or packing in accordance with the lift plan
 - levels are checked
- test-lifting load just clear of lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure:
 - slinging is correct
 - all crane equipment is functioning properly
 - load centre of gravity is correct
 - loads of unusual shape or weight distribution are correctly slung
- test-lifting load just clear of lifting plane to allow for checks of crane computer (where fitted) to ensure:
 - load measuring equipment can be used to verify calculated weight of load
 - near capacity loads do not overload crane

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- appropriate workplace communication procedures including:
 - hand signals
 - questioning techniques
 - signage
 - two-way radios
 - written instructions
 - whistles
- characteristics and impact of factors affecting non-slewing articulated mobile crane stability whilst mobilising compared to slewing crane including:
 - articulation of crane
 - correct tyre pressure (inflation/condition)
 - driving safely on public and private roadways
 - unique handling characteristics of a mobile articulated crane and the emergency

- procedures in the event of loss of control as per manufacturer recommendations
- pick up and carry the load
- side slope derations
- characteristics and impact of factors affecting vehicle loading crane stability whilst mobiling compared to slewing crane including:
 - correct tyre pressure (inflation/condition)
 - emergency procedures in the event of incident
 - position of operator
 - use of stabilizers
- characteristics and impact of factors affecting reach stacker stability whilst mobiling compared to slewing crane including:
 - correct tyre pressure (inflation/condition)
 - driving safely on road ways
 - emergency procedures in the event of incident
 - impact of boom height and steering on stability
 - use of stabilizers
- crane configuration mathematical calculations to:
 - estimate loads
 - establish counterweight/s requirements
 - radius requirements
 - relevant lifting gear to perform work/task
- crane, lifting gear load chart/s and manufacturer requirements
- factors impacting lift including:
 - centre of gravity
 - dynamic nature of load
 - flex/deflection of boom
 - length of load
 - radius of boom during lift
 - weight
- hazards including:
 - erection and pack up
 - crane stability
 - ground stability and condition including recently filled trenches and slopes
 - insufficient lighting
 - obstacles or obstruction
 - other specific hazards and dangerous materials
 - overhead hazards including:
 - electric lines
 - service pipes
 - structures

- vegetation (trees)
- traffic including pedestrians, vehicles and other plant
- operations on unusual, uneven or difficult terrains
- manufacturer requirements on outrigger procedures
- manufacturer requirements and instructions on shutting down and packing up crane
- mobile slewing crane characteristics and capabilities to allow crane configuration to suit a range of loads
- prestart and operational checks required for a slewing mobile crane
- problems and appropriate response procedures to unplanned and/or unsafe situations and environmental conditions
- relevant workplace instructions, safety information, emergency procedures
- relevant documentation requirements and procedures for recording, reporting and maintaining workplace records and information
- risk assessment management and mitigation strategies including hierarchy of control:
 - elimination
 - substitution
 - isolation
 - engineering controls
 - administrative controls
 - personal protective equipment (PPE)
- roles and responsibilities of duty holders as per legislative obligations of Work Health and Safety (WHS)/Occupational Health and Safety (OHS)/Occupational Safety and Health (OSH) requirements, safe work and workplace procedures
- starting procedure of crane as per manufacturer requirements
- set up of:
 - jib
 - fly jib/luffing fly
 - counterweight/s
- stability of load and avoidance of hazards using best crane practice including:
 - allowing for boom deflection
 - boom/jib as low as possible
 - carrying load near to ground surface
 - crane stability
 - gently accelerating and braking on slew/boom to minimise load swing
 - lowering load safely onto appropriate dunnage taking into consideration swing and restrictions of area
 - minimum boom/jib length
 - minimum speed
 - using handheld taglines as required
 - identification of incorrect sling of load
- typical routine problems encountered operating a crane and equipment, and adjustments

- required for correction
- weather bureau forecasts and environmental conditions that could impact operation including:
 - lightning
 - wind
 - water impacted ground
 - Ultra Violet (UV) exposure
 - workplace standards, requirements, policies and procedures for conducting safe work operations for the mobile slewing crane
 - work area suitability based on relevant ground reports including:
 - backfilled ground
 - bitumen
 - concrete
 - hard compacted soil
 - pre-contaminated soils
 - rock
 - rough uneven ground
 - soft soils

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

- Simulators must not be used in the assessment of this unit of competency.

Resources for assessment must include access to:

- slewing mobile crane with a MRC greater than 20 tonnes and up to 60 tonnes in safe/serviceable working order in accordance with manufacturers specifications
- appropriate loads as outlined in the performance evidence requirements
- appropriate personnel to sling and direct loads including:
 - dogger or rigger
- communications equipment including:
 - two-way radios

- whistles
- relevant personal protective equipment (PPE)
- relevant documentation for operating a slewing mobile crane with a MRC greater than 20 and up to 60 tonnes including:
 - approved codes of practice and relevant guidance material
 - relevant Australian technical standards
 - manufacturer guidelines (instructions, requirements or checklists), relevant industry standards and operating procedures (where applicable).

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

TLILIC2016 Licence to drive a heavy rigid vehicle

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package.

Modification of assessment conditions to remove an implementation barrier.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Application

This unit involves the skills and knowledge required to obtain a licence to drive a heavy rigid vehicle. It includes systematically and efficiently controlling all vehicle functions, monitoring traffic and road conditions, managing vehicle condition and performance, and effectively managing hazardous situations.

Heavy rigid vehicle includes:

- a rigid vehicle, not being an unladen prime mover, with a minimum of three axles and a minimum 15 tonnes GVM or
- a modified three axle prime mover with a certified detachable tray (with capacity to carry 75% of its specified GVM) with a GVM of 15 tonnes and holds dual registration (HC & HR) or
- a three axle articulated bus or
- a three axle bus above 15 tonnes GVM.

Assessment of this unit will be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory driver licensing authority.

This unit applies to driving that is carried out in accordance with relevant state/territory driver licensing authority licence requirements and regulations for heavy rigid vehicles.

Driving is performed with limited or minimum supervision, and with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain safety and to operate a heavy rigid vehicle across a variety of driving contexts.

The primary legislative requirements applicable to this unit of competency are state/territory legislation in relation to road use and driver licensing.

This unit addresses the knowledge and skills necessary for the granting of a Heavy Rigid Driver Licence.

Being awarded this unit of competency is a necessary requirement to obtain a Heavy Rigid Driver Licence but is only one of several criteria. Prospective licence applicants should check with the state/territory driver licensing authority for other criteria (such as licence tenure and medical fitness) to confirm other eligibility requirements before undertaking training and/or

assessment.

Pre-requisite Unit

Not applicable.

Competency Field

LIC – Licensing

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Drive a heavy rigid vehicle

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 Heavy rigid vehicle is started, steered, manoeuvred, positioned and stopped in accordance with traffic regulations, manufacturer instructions and relevant vehicle handling procedures
 - 1.2 Engine power is managed to ensure efficiency and performance, and to minimise engine and gear damage
 - 1.3 Braking system of heavy rigid vehicle is managed and operated efficiently to ensure effective control of vehicle under all conditions
 - 1.4 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
 - 1.5 Heavy rigid vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
 - 1.6 Heavy rigid vehicle is parked, shutdown and safely secured according to traffic regulations
 - 1.7 Load is safely and effectively restrained
- 2.1 Traffic and road conditions are constantly monitored and acted on to enable safe operation and to ensure no injury to

2 Monitor traffic and

road conditions		people or damage to property, equipment, loads and facilities
	2.2	Interaction with other road users is conducted courteously in accordance with road rules to ensure safe and efficient traffic flow
3 Monitor and maintain vehicle performance	3.1	Vehicle performance is maintained through pre-operational inspections and vehicle checks
	3.2	Appropriate signage, lights and equipment are checked for operational effectiveness and for conformity to prescribed traffic regulations

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLILIC2016B Licence to drive a heavy rigid vehicle.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

Assessment Requirements for TLILIC2016 Licence to drive a heavy rigid vehicle

Modification History

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package.

Modification of assessment conditions to remove an implementation barrier.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- anticipating and monitoring traffic hazards and taking appropriate action
- applying precautions and required action to eliminate, minimise or control identified hazards
- applying relevant procedures that reflect legislative requirements
- carrying out pre-operational vehicle checks including:
 - checking and topping up fluid levels
 - checking:
 - brakes
 - operation of vehicle lights and indicators
 - tyre pressures
 - visually checking vehicle
- communicating effectively with others
- handling vehicle including:
 - accelerating and braking
 - managing engine performance
 - operating vehicle controls, instruments and indicators
 - positioning and stopping a vehicle
 - reversing a vehicle
 - starting a vehicle
 - steering and manoeuvring a vehicle
 - using defensive driving techniques
- negotiating a range of complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings)
- reading and interpreting relevant instructions, procedures, information and signs.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- driving hazards and related defensive driving techniques
- efficient driving techniques
- engine power management and safe driving strategies
- heavy rigid vehicle controls, instruments and indicators, and their use
- heavy rigid vehicle handling procedures
- pre-operational checks carried out on vehicle and related action
- relevant state/territory driver licensing authority road rules, regulations, permit and licence requirements.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

Practical driving aspects must be assessed in a vehicle typical of the class as approved by the state/territory driver licensing authority. The use of simulators for driver testing is not permitted.

The assessor must use the mandatory assessment tool provided by the state/territory driver licensing authority to conduct the assessment for this unit according to licensing authority requirements.

The state/territory driver licensing authority may prescribe approved routes, which must be used for the final assessment.

Assessment must occur in the following traffic and road conditions:

- on open and/or private roads with moderate inclines and declines
- typical weather conditions.

and may also include traffic and road conditions at a depot, base or warehouse.

Resources for assessment include:

- a range of relevant exercises, case studies and/or simulations
- appropriate range of relevant on-road operational or workplace situations
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
- relevant materials, tools, equipment and personal protective equipment currently used in industry.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to apply work health and safety (WHS)/occupational health and safety (OHS) regulations and codes of practices in the electrotechnology workplace.

It includes applying safe working practices, following workplace procedures for hazard identification and risk control. It also includes electrotechnology worker responsibilities and application for health and safety, risk management and adherence to safety practices as part of electrotechnology work functions when preparing to enter a work area.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable

Competency Field

Cross Discipline

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to enter an electrotechnology workplace

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Work area access permits are obtained from appropriate person/s in accordance with workplace procedures

- 1.2** Relevant workplace WHS/OHS safety regulations and codes of practices are identified and followed when entering the electrotechnology work area
 - 1.3** Safe work methods for controlling risks are obtained, read and applied prior to undertaking work activity in accordance with WHS/OHS workplace procedures
 - 1.4** Preparation for electrical and non-electrical isolation is carried out to prevent creation of hazards from loss of machine/system/process control in accordance with WHS/OHS workplace procedures
 - 1.5** Tools, equipment and chemicals required for the electrotechnology work are checked for safety and correct functionality in accordance with workplace procedures and regulatory requirements
 - 1.6** Personal protective equipment (PPE) is worn appropriate to the electrotechnology work area and in accordance with workplace procedures
- 2 Apply safe electrotechnology working practices**
- 2.1** Risk control work measures are implemented in accordance with WHS/OHS workplace procedures
 - 2.2** Procedures for dealing with accidents, fires and emergencies are followed in accordance with workplace procedures, scope of responsibility and capabilities
 - 2.3** Safe work methods are applied when working at heights including safe and effective use of safety equipment
 - 2.4** Safe work methods are used when undertaking lifting, lowering, pushing, pulling, carrying or otherwise moving, holding or restraining workplace tasks in accordance with relevant code of practice
 - 2.5** Safe work methods for removing an electric shock victim from a live electrical situation are demonstrated in accordance with workplace emergency management procedures
 - 2.6** Working area is kept clean, neat and tidy in accordance with workplace housekeeping procedures
- 3 Follow electrotechnology workplace procedures for hazard identification and**
- 3.1** Hazards are identified, control measures implemented and reviewed through regular active participation in the consultation process with employer and other employees

risk control

- 3.2** Hazards in the work area are identified and reported to relevant person/s in accordance with workplace procedures
- 3.3** WHS/OHS documentation and incident records are completed in accordance with regulatory requirements and workplace procedures
- 3.4** Workplace instructions are followed in accordance with regulatory requirements and workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace.

Links

Companion Volume implementation guides are found in VETNet - -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) regulations, legislation, codes of practices and procedures in the workplace, including:
 - identifying typical hazards associated with work environments and assessing risk/s in an electrotechnology workplace
 - applying and reviewing risk control measures to minimise, control or eliminate identified hazards
 - reporting hazards to relevant person/s
 - applying safe working practices/methods
 - contributing to WHS/OHS consultative processes
- following relevant workplace emergency management procedures and instructions relating to WHS/OHS and emergency incidents
- selecting and using appropriate personal protective equipment (PPE)
- applying correct manual handling techniques
- confirming (safe) isolation of an electrical supply and isolation of potential electrical and non-electrical hazards has been completed by an authorised person
- demonstrating safe methods of removing an electric shock victim from a live electrical situation
- selecting an appropriate ladder for a given situation and performing a safety check before use
- completing relevant WHS/OHS documentation.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- effective verbal and written communication techniques
- electrotechnology work environment, including:
 - appropriate fire extinguisher for a given type of fire
 - commonly used workplace safety signs

- relevant industry standard for safe workplace procedures
- risk assessment documentation
- typical hazards associated with a range of work environments
- use of fire extinguishers
- housekeeping and potential hazards in relation to improper housekeeping
- workplace procedures used to control the risks associated with workplace hazards
- legal requirements relevant to WHS/OHS in the workplace, including:
 - appropriate personal protective equipment (PPE)
 - asbestos awareness and reporting hazardous gases, including supervisory requirements and duty of care
 - difference between hazards and risks
 - duty holder responsibilities, as specified in WHS/OHS Acts, regulations and codes of practice
 - employer and employee responsibilities, rights and obligations
 - general aims and objectives of the relevant state or territory legislation relating to WHS/OHS
 - hazards that may be present in the electrotechnology workplace, the harm they can cause and how this harm occurs
 - housekeeping and potential hazards in relation to improper housekeeping
 - major functions of safety committees and representatives
 - powers of health and safety inspectors
 - relevant WHS/OHS regulations, codes and practices
 - underlying principles of WHS
- life support - cardiopulmonary resuscitation (CPR) in the workplace, including:
 - first aid
 - responsibilities of the first aider
 - priorities of first aid management for any accident or injury
 - procedures required at an accident scene
 - legal and ethical issues, which may impact on the management of care
 - 'duty of care'
 - examination of a casualty for injuries
 - effect of cardiopulmonary arrest on the body
 - managing simulated conditions of airway obstruction, respiratory arrest and cardiopulmonary arrest
 - single and two-person CPR
 - signs and symptoms of an altered level of consciousness
 - management of simulation of a casualty with an altered level of consciousness
 - signs and symptoms of shock
 - management of simulation of a casualty in shock
- relevant safe work method statements (SWMS)/job safety analysis (JSA) or risk mitigation processes, including:

- emergency management plan
- hierarchy of WHS/OHS hazard risk control measures
- principles of risk assessment/management and required documentation
- typical hazards associated with electrotechnology work environments and their control, including:
 - asbestos, including:
 - common types of asbestos containing building materials
 - warning signs used to identify the presence of asbestos
 - effects of asbestos on the human body
 - requirements for reporting the presence of asbestos
 - silica, including:
 - types of materials that contain crystalline silica (silica dust)
 - methods of releasing silica dust
 - recommended levels of exposure to crystalline silica
 - effects of crystalline silica on the human body
 - hazardous gases
 - chemicals in the workplace, including:
 - hazardous substances and dangerous goods and their classifications
 - labelling and storage requirements for chemicals
 - purpose and interpretation of safety data sheets (SDS)/material safety data sheets (MSDS)
 - confined spaces, including:
 - control measures for working in a designated confined space
 - hazards associated with working in a confined space
 - workplace situations that could be classified as a confined space
 - physical and psychological hazards, including excessive noise, vibration, thermal stress, radiation, lasers, occupational overuse syndrome, stress, drugs and alcohol
 - safe manual handling principles, including:
 - procedures and methods for manual handling
 - situations that may cause manual handling injuries
 - types of manual handling injuries and their effect
 - working at heights, including:
 - hazards and precautions associated with working on ladders, elevated work platforms (EWP) and scaffolds
 - identification of work area as a height risk and use appropriate safety equipment to prevent a fall
 - working safely with electricity, including:
 - effects of electric shock on the human body
 - protection offered by a residual current device (RCD)
 - need for ensuring the (safe) isolation of an electrical supply

- appropriate method of removing an electric shock victim from a live electrical situation
- precautions that can minimise the chance of electric shock (earthing, extra-low voltage (ELV), fuses, circuit breakers and RCDs)
- common causes of electrical accidents.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, emergency management plan, equipment specifications, regulations, codes of practice and operation manuals
- relevant WHS/OHS legislation, regulations and codes of practice related to hazards management in the electrotechnology industry and workplace.

Links

Companion Volume implementation guides are found in VETNet - -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

UEERA0049 Install and start up single head split air conditioning and water heating heat pump systems

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to position, assemble, install, start up and decommission single head split air conditioning systems and water heating heat pump split systems, up to a maximum of 18 kilowatt (kW) refrigeration capacity.

It includes following standards, codes of practice, regulatory requirements and routine procedures to install equipment, connect pipe work, pressure test, evacuate, perform functional checks and complete required documentation.

To undertake this unit, the learner must have a Trainee Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted.

The skills and knowledge described in this unit require a national Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted while decanting the refrigerant or manufacturing, installing, commissioning, servicing, maintaining or decommissioning refrigeration and air conditioning equipment.

The skills and knowledge described in this unit may, in some jurisdictions, also require a licence or permit to practice in the workplace subject to regulations for undertaking refrigeration and air conditioning work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEERA0059 Prepare and connect refrigerant tubing and fittings

UEERA0064 Recover, pressure test, evacuate, charge and leak test refrigerants - split systems

Competency Field

Refrigeration and air-conditioning

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to assemble, install and start up split air conditioning and water heat pump system

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied in accordance with workplace procedures
- 1.2** Safety hazards which have not previously been identified are assessed, reported and advice on risk control measures sought from supervisor
- 1.3** Work activities are sequenced in accordance with job schedule
- 1.4** Relevant person/s is consulted to ensure the work is coordinated effectively with others involved on the worksite
- 1.5** Layout of pipe work to be installed is determined from job/task details, including manufacturer specifications and diagrams
- 1.6** Materials needed to carry out the work are obtained in accordance with workplace procedures and checked against job/task requirements
- 1.7** Tools, equipment and testing devices are obtained in accordance with workplace procedures and checked for operation and safety
- 1.8** Appropriately licensed electrician is confirmed to carry out electrical work for the air conditioning and water heat pump system
- 1.9** Appropriately licensed plumber is confirmed to carry out mains water piping work for the heat pump hot water system
- 1.10** Preparatory work is checked to ensure no damage has occurred and complies with job/task requirements in

- accordance with workplace procedures
- 2 Assemble, install and start up split air conditioning and water heat pump system**
- 2.1** Split air conditioning and water heat pump system components are positioned and assembled in accordance with workplace procedures, manufacturer instructions and industry standards
- 2.2** Interconnecting refrigerant piping/tubing is prepared and installed in accordance with workplace procedures, manufacturer instructions and industry standards
- 2.3** Components are pressure tested and evacuated in strict accordance with manufacturer instructions, industry standards and codes of practice
- 2.4** Condensate drains are prepared and installed to the units in accordance with workplace procedures, manufacturer instructions, industry standards and local regulatory requirements
- 2.5** The refrigerant service valves are opened on the pre-charged outdoor unit to enable the refrigerant to enter the evacuated pipe work and the connected unit in strict accordance with manufacturer instructions and industry standards
- 2.6** Unplanned situations are discussed with relevant person/supervisor, documented and dealt with safely in accordance with workplace procedures
- 2.7** Quality checks of installation and start-up are undertaken in accordance with workplace procedures
- 2.8** Notification is given to relevant person/s that the split air conditioning and water heat pump system is ready for electrical and/or mains water connection in accordance with workplace procedures
- 2.9** Split air conditioning and water heat pump work is carried out efficiently without waste of materials or damage to apparatus, circuits, the surrounding environment or services using relevant workplace sustainable energy principles in accordance with workplace procedures
- 3 Test single head split air conditioning and water heat pump system**
- 3.1** Split air conditioning and water heat pump system performance is inspected and tested in accordance with workplace procedures to ensure compliance with industry technical standards, manufacturer specifications

and job/task requirements

- 3.2** Worksite and equipment are cleaned and made safe in accordance with workplace procedures
- 3.3** Work completion is documented and appropriate person/s notified in accordance with workplace procedures
- 4 Decommission split air conditioning and water heat pump system**
 - 4.1** Refrigerant is pumped down and/or recovered from indoor unit, interconnecting refrigerant piping/tubing is removed, and indoor and outdoor refrigerant circuits are sealed in accordance with workplace procedures, manufacturer instructions and industry standards
 - 4.2** Licensed electrician is engaged in accordance with workplace procedures to isolate and disconnect electrical supply and cabling from air conditioning and water heat pump system
 - 4.3** Indoor and outdoor refrigerant pipework, water pipework, condensate drains and electrical conduits/cables are unmounted in accordance with workplace procedures
 - 4.4** Unplanned situations are discussed with appropriate person/s, documented and dealt with safely in accordance with workplace procedures
 - 4.5** Split air conditioning and water heat pump work is carried out efficiently without waste of materials or damage to apparatus, circuits, the surrounding environment or services using relevant workplace sustainable energy principles
 - 4.6** Worksite and equipment are cleaned and made safe in accordance with workplace procedures
 - 4.7** Work completion is documented and appropriate person/s notified in accordance with workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Assembling, installing, starting up and decommissioning single head split air conditioning and water heat pump system (hot water or swimming pool) up to a maximum of 18 kW refrigeration capacity must include at least the following:

- condensate drain installation
- decommissioning
- evacuation
- functional performance check
- installation/regulatory documentation
- pipe work connection
- pressure test
- refrigerant pipework installation
- use of safe working procedures and industry standards and code of practice
- unrestricted licensed electrician
- appropriately licensed plumber
- leak testing and fitting of caps to all refrigerant access ports, which could allow refrigerant to escape into the environment

Electrical connection must be carried out by:

Mains water connection must be carried out by:

Making area/worksite safe must include at least the following:

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ105A Position, assemble and start up single head split air conditioning and water heating heat pump systems.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERA0049 Install and start up single head split air conditioning and water heating heat pump systems

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
- applying safe working practices and relevant legislation, industry standards, codes of practice and regulations
- applying sustainable energy principles and practices
- assembling, installing and starting up split air conditioning and/or water heat pump system
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- decommissioning split air conditioning and/or water heat pump system
- determining job/work task requirements and applying workplace procedures, including making equipment/worksites safe
- documenting work activities
- giving notification to appropriate person/s for electrical connections to be completed
- implementing risk control measures
- inspecting and testing single head split air conditioning and/or water heat pump system and documenting performance to manufacturer specifications, including undertaking functional performance checks
- making equipment and worksites safe through leak testing and fitting of caps to refrigerant access ports to stop refrigerant escaping into the environment
- positioning and assembling system components to specifications
- installing and connecting refrigerant piping
- installing and connecting condensate drain piping
- preparing to assemble, install and start up a single head split air conditioning system and/or water heat pump system with a maximum cooling/heating capacity of less than 18 kilowatt (kW)
- pressure testing and evacuating system using manufacturer instructions.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- condensate drain pipe work installation and connections
- refrigerant pipe work installation and connections
- relevant A1 and A2L class refrigerant, systems, piping, tools and equipment
- relevant codes of practice, industry standards, regulations and WHS/OHS legislated requirements, including:
 - AS/NZS 5141 Residential heating and cooling systems - Minimum applications and requirements for energy efficiency, performance and comfort criteria
 - AS/NZS 5149.3 Refrigerating systems and heat pumps - Safety and environmental requirements - Installation site
 - AS/NZS 5149.4 Refrigerating systems and heat pumps - Safety and environmental requirements - Operation, maintenance, repair and recovery
 - Australia and New Zealand Refrigerant Handling Code of Practice - Part 2 Systems other than self-contained low charge systems
 - Ozone Protection and Synthetic Greenhouse Gas Management Regulations
- relevant manufacturer specifications and instructions relevant risk mitigation processes, including safe working practices and risk control measures
- relevant workplace documentation
- relevant workplace policies and procedures
- role of licensed electrician/plumber
- split air conditioning and water heat pump (maximum plant capacity for each system is 18 kW), including:
 - decommissioning split system requirements and procedures installing split systems, including manufacturer instructions, location, mounting and connecting pipe work
 - single head split air conditioning system (up to 18 kW) types, applications, major components, controls, operation and operating conditions
 - split system start-up, including manufacturer instructions, pressure testing, evacuation, checking refrigerant charge, adding refrigerant, leak detection and checking function and performance.
 - split water heating heat pump system (up to 18 kW) types, applications, major components, controls, operation and operating conditions
- sustainable energy principles and practices.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the

time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

UEERA0059 Prepare and connect refrigerant tubing and fittings

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to prepare and connect refrigeration and air conditioning piping/tubing and fittings.

It includes cutting, bending and connecting copper tubes to copper tubes and to brass and steel fittings by flaring and swaging using compression fittings and silver brazing.

The skills and knowledge in this unit will be applied by refrigeration and air conditioning technicians during the installation, service and repair of refrigeration and air conditioning systems.

To undertake this unit, the learner must have a Trainee Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted.

The skills and knowledge described in this unit require a national Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted while decanting the refrigerant or manufacturing, installing, commissioning, servicing, maintaining or decommissioning refrigeration and air conditioning equipment.

The skills and knowledge described in this unit may, in some jurisdictions, also require a licence or permit to practice in the workplace subject to regulations for undertaking refrigeration and air conditioning work.

Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Competency Field

Refrigeration and air-conditioning

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to fabricate tubing and attach fittings for refrigeration and/or air conditioning system

2 Fabricate tubing and attach fittings for refrigeration and/or air conditioning system

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied
- 1.2 Safety hazards which have not previously been identified are reported and advice on risk control measures is sought from supervisor
- 1.3 Nature of work is obtained from documentation or supervisor to determine scope of work to be undertaken
- 1.5 Advice is sought from supervisor to ensure work is coordinated effectively with others
- 1.5 Materials required for the work are accessed in accordance with workplace procedures
- 1.6 Tools, equipment and testing devices to carry out work are obtained and checked for correct operation and safety
- 2.1 Tasks are completed in accordance with workplace safety procedures
- 2.2 Relevant safe work methods are used to cut, flare, swage, bend and silver braze tubing and fittings as they apply to refrigeration and/or air conditioning systems
- 2.3 Refrigerant tubing and fittings are silver brazed with the use of dry nitrogen to prevent contamination
- 2.4 Fabricated tubing and fittings are prepared without waste of materials or damage/contamination to apparatus, the surrounding environment or services using relevant workplace sustainable energy practices in

accordance with workplace procedures

- 2.5** Quality checks are carried out regularly in accordance with workplace procedures, instructions/or specifications, including dimensions and pressure testing

- 3 Complete work and report**
- 3.1** Worksite is cleaned and made safe in accordance with workplace procedures
- 3.2** Supervisor is notified of task completion in accordance with workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Preparing and connecting refrigerant tubing and fittings must include at least the following:

- cutting, flaring, bending and swaging using compression fittings, silver brazing copper tube to copper tube and brass and steel fittings
- piping/tubing and fittings for high-pressure refrigerants

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ102A Prepare and connect refrigerant tubing and fittings.

Links

Companion Volume implementation guides are found in VETNet - -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERA0059 Prepare and connect refrigerant tubing and fittings

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant industry standards, codes of practice, regulations and work health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
- applying sustainable energy principles and practices
- completing documentation and reporting requirements
- identifying and monitoring hazards and using applicable safety data sheets (SDS)/material safety data sheets (MSDS)
- preparing, fabricating and attaching refrigerant tubing and fittings, including:
 - attaching fittings correctly
 - conducting component quality checks
 - cutting, bending and joining refrigerant piping and tubing using appropriate tools and equipment, including compression fittings and high-pressure refrigerants
 - silver brazing copper tubes and fittings using dry nitrogen
- setting up equipment safely.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- copper tube grades, including types, properties, applications and handling
- dissimilar metals, including:
 - aluminium
 - brass
 - steel
 - stainless steel
- potential hazards with refrigerant tubing and fittings

- refrigerant tubing and fittings techniques, including:
 - annealing
 - bending
 - cutting
 - flaring
 - tube expanding
 - joining
 - silver brazing
 - use of dry nitrogen
- refrigeration copper tube fittings and access valves
- relevant legislation, industry standards, codes of practice and regulations
- relevant manufacturer specifications
- relevant risk mitigation processes, including safe working practices
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- SDS/MSDS
- sustainable energy principles and practices
- tools and equipment, including care and maintenance.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

UEERA0064 Recover, pressure test, evacuate, charge and leak test refrigerants - split systems

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to undertake the recovery of refrigerants, perform pressure and leak testing, evacuations and refrigerant charging in split air conditioning and heat pump systems.

It includes working safely; applying relevant regulations, industry standards and codes of practice in recovering refrigerants; performing pressure and leak tests; evacuating and charging with refrigerant split systems; and completing all required documentation.

To undertake this unit, the learner must have a Trainee Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted.

The skills and knowledge described in this unit require a national Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted while decanting the refrigerant or manufacturing, installing, commissioning, servicing, maintaining or decommissioning refrigeration and air conditioning equipment.

The skills and knowledge described in this unit may, in some jurisdictions, also require a licence or permit to practice in the workplace subject to regulations for undertaking refrigeration and air conditioning work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Competency Field

Refrigeration and air-conditioning

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Prepare to recover refrigerant, pressure and leak test, evacuate and charge split systems

1.1 WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied in accordance with workplace procedures

1.2 Safety hazards not previously identified are assessed, reported and advice on risk control measures sought from supervisor

1.3 Nature of the work is obtained from documentation or supervisor to determine the scope of work to be undertaken

1.4 Work activity is appropriately sequenced in accordance with job schedule

1.5 Relevant person/s is consulted to ensure work is coordinated effectively with others involved on the worksite

1.6 Refrigerant, lubricants and cleaning materials for work are obtained in accordance with workplace procedures and checked against job/task requirements

1.7 Tools, equipment and testing devices needed to carry out the work are obtained and checked for correct operation and safety

1.8 Preparatory work is inspected and checked to ensure no damage has occurred and complies with workplace procedures and job/task requirements

2 Recover refrigerant, pressure and leak test evacuate and charge split systems

2.1 Checks are carried out to ensure the system and/or component parts are isolated in accordance with workplace procedures

2.2 Machines, plant and circuits are isolated in accordance with workplace procedures

2.3 Refrigerants are safely removed from split system and placed into labelled containers in accordance with regulatory requirements, industry standards and codes of

practice, and any electrical work is referred to a licensed electrician in accordance with workplace procedures.

- 2.4 Precautions are taken to prevent damage to components while pressure testing the system
- 2.5 Pressure testing is conducted using dry nitrogen at a pressure relative to the refrigerant to be used
- 2.6 Leaks are located and rectified using testing methods appropriate to system under test in accordance with industry standards
- 2.7 Split system is evacuated to required level and system is cleaned of all moisture and other containments in accordance with industry standards and codes of practice
- 2.8 A drop test is performed to test evacuation using an electronic vacuum gauge in accordance with industry standards and codes of practice
- 2.9 Component lubricants are checked and maintained in accordance with manufacturer specifications
- 2.10 Split systems are charged with refrigerant in accordance with manufacturer specifications, industry standards and codes of practice
- 2.11 Problematic situations are resolved in accordance with workplace procedures and reported to supervisor
- 2.12 Split systems are pressure and leak tested, evacuated and charged without waste of materials or damage to apparatus, the surrounding environment or services in accordance with relevant workplace sustainable energy practices

3 Report on refrigerant recovery, pressure and leak test, evacuation and charge work

- 3.1 Worksite is cleaned and made safe in accordance with workplace procedures
- 3.2 Contaminated refrigerant is dealt with in accordance with workplace procedures and legislative/regulatory requirements
- 3.3 Completion of work is documented and appropriate person/supervisor notified in accordance with workplace

procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

testing and charging split air conditioning systems must include at least the following:

- determining, using measurement and basic calculations methods, the operating conditions of vapour compression split system, including suction and discharge pressures
- ambient, evaporator and condensing temperatures
- evaporator and condenser temperature differences recovering Class A1 and A2L refrigerant from an existing split system, including split single head air conditioning and/or hot water heat pump systems pressure and leak testing a newly installed system
- evacuating newly installed systems in preparation for charging with refrigerant
- charging newly installed systems with Class A1 and A2L refrigerant

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ172A Recover, pressure test, evacuate, charge and leak test refrigerants - split systems.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERA0064 Recover, pressure test, evacuate, charge and leak test refrigerants - split systems

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - identifying hazards
 - risk control measures
 - using personal protective equipment (PPE)
- applying safe working practices and relevant legislation, industry standards, codes of practice and regulations
- completing required documentation, including reporting refrigerant recovery, pressure and leak tests, evacuations, charging refrigerant work and system operating conditions determining basic operating conditions, including:
 - ambient, evaporation and condensing temperatures
 - evaporator and condenser temperature differences
 - suction and discharge pressures
- recovering, pressure testing, evacuating, charging and leak testing refrigerant in newly installed split systems to requirements using appropriate equipment, tools and measurement devices
- starting up system and performing function checks
- selecting, obtaining and checking relevant equipment, materials, tools and testing devices required to carry out the work, including:
 - A1, A2 and A2L class refrigerants, lubricants and charging equipment
 - oxygen-free dry nitrogen cylinder and regulator
 - pressure and temperature measurement devices
 - pressure testing and refrigerant leak testing equipment and tools
 - refrigeration evacuation equipment and measuring equipment suitable for A1, A2 and A2L class refrigerants
 - refrigerant recovery/reclaim equipment suitable for A1, A2 and A2L class refrigerants
 - refrigeration hand and power tools
 - refrigeration service tools

- single head split air conditioning systems
- using lubricants and cleaning materials safely in accordance with safety data sheets (SDS)/material safety data sheets (MSDS).

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- equipment and procedures for working with refrigerants, including:
 - charging refrigerant into a newly installed split system detecting refrigerant leaks (electronic, bubbles and halide for R22)
 - contaminant detection and removal
 - evacuating newly installed split systems
 - pressure testing systems newly installed split systems using dry nitrogen
 - reclaiming/recovering refrigerants using recovery units and recovery cylinders
- heat and heat transfer
- leak detectors types, applications, operation and procedures
- manifold gauges types, applications, operation and procedures
- pressure temperature relationships and charts
- pressure, units and measurement
- refrigerant conditions, including saturation, superheat and sub-cooling
- relative humidity, unit and measurement
- relevant industry standards, codes of practice and regulations, including WHS/OHS legislated requirements
- relevant manufacturer specifications
- relevant risk mitigation processes, including risk control measures
- safe working practices, safe handling and SDS/MSDS
- sensible and latent heat
- split heat pump Class A1, A2 and A2L refrigerant types, properties and applications
- split heat pump refrigerant oil types, properties and applications
- sustainable energy principles and practices, including:
 - environment protection requirements
 - sustainable energy practices
 - sustainable resources
- system access fittings types, applications, operation and procedures
- temperature, units and measurement
- vapour compression cycle, basic operation and major system components.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training

Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and PPE currently used in industry
- applicable documentation, including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

UEERL0003 Conduct in-service safety testing of electrical cord connected equipment and cord assemblies

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to conduct in-service safety testing of electrical cord connected equipment and cord assemblies.

It includes working safely, using portable appliance tester (PAT), identifying faults, applying tagging, arranging for repair of faulty equipment and complete testing documentation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Competency Field

Restricted Licensing

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to test cord connected apparatus and cord assemblies

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) procedures for a given work area are identified, obtained and applied
- 1.2** WHS/OHS risk control work preparation measures and procedures are followed

- 1.3 Advice is sought from relevant person/s to ensure work is effectively coordinated with others
 - 1.4 Cord connected apparatus and cord assemblies to be tested are obtained in accordance with workplace procedures
 - 1.5 PAT device is checked for correct operation and safety in accordance with relevant industry standards and workplace procedures
- 2 Test cord connected apparatus and cord assemblies**
 - 2.1 WHS/OHS risk control work measures and procedures are followed
 - 2.2 Measures are followed to ensure that cord connected apparatus and cord assemblies to be tested are not connected to the electrical supply in accordance with relevant industry standards
 - 2.3 Electrical safety requirements and parameters are applied to ensure correct test results are in accordance with relevant industry standards
 - 2.4 Visual inspection and checks of the cord connected apparatus and cord assemblies are carried out in accordance with workplace procedures to detect any abnormal damage or fault
 - 2.5 Approval is obtained in accordance with workplace procedures from relevant person/s before any contingencies are implemented
 - 2.6 PAT routines are followed to test cord connected apparatus and cord assemblies in accordance with workplace procedures
 - 2.7 Unsafe cord connected apparatus and cord assemblies are identified from test results in accordance with workplace procedures
 - 2.8 Testing is undertaken effectively to minimise waste of energy and damage to apparatus
- 3 Tag cord connected apparatus and cord assemblies and document testing activities**
 - 3.1 WHS/OHS work completion risk control measures and procedures are followed

- 3.2 Worksite is cleaned and made safe in accordance with workplace procedures
- 3.3 Cord connected apparatus and cord assemblies are tagged in accordance with workplace procedures for their safety status
- 3.4 Arrangements are made for unsafe cord connected apparatus and cord assemblies to be repaired by relevant person/s
- 3.5 Safety testing activities are documented in accordance with relevant industry standards and workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

In-service safety testing must include the following:

- at least two different electrical cords and three different items of cord connected equipment with safety faults, including:
 - a device containing an element
 - a device containing a motor
 - a device containing metal oxide varistors (MOV)

Unit Mapping Information

This unit replaces and is equivalent to UEENEPP026A Conduct in-service safety testing of electrical cord connected equipment and cord assemblies.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERL0003 Conduct in-service safety testing of electrical cord connected equipment and cord assemblies

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying appropriate tagging
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
- connecting cords and apparatus to the testing device
- dealing with unplanned events in accordance with problem-solving techniques and workplace procedures
- documenting testing activities, including workplace register
- identifying safe and unsafe cords and apparatus
- preparing to test cord connected apparatus and cord assemblies
- preparing and using the portable appliance tester (PAT)
- safety testing of electrical cord connected equipment and cord assemblies
- tagging tested cord connected apparatus and cord assemblies and document testing activities
- using test results to determine the safety status.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- Australian Standards and Commonwealth/state/territory legislation and regulations including:
 - Australian Standard AS/NZS 3760 In-service safety inspection and testing of electrical equipment
 - Commonwealth/state/territory WHS/OHS Acts and regulations
 - limitations of work that can be undertaken
 - codes of practice and associated guidance material
 - risk management principles

- basic electrical testing concepts, including:
 - basic electrical circuits
 - functions of electrical circuit
 - conductors and insulators
 - basic electrical supply system
 - relationship of electrical quantities
 - effects of electrical currents
 - methods/devices used to negate or minimise electrical shock
 - PAT
 - PAT maintenance and calibration
- electrical equipment and cord assemblies testing, including:
 - classification of electrical equipment
 - inspection of electrical equipment (visual inspections)
 - using PAT:
 - earth continuity testing
 - insulation resistance testing
 - polarity testing (extension cords and IEC cords)
- testing and tagging documentation requirements, including:
 - risk assessment documentation
 - frequency of inspection and testing
 - tagging of equipment
 - records maintenance
- electrical cord testing and tagging documentation requirements
- electrical equipment and cord assemblies testing
- electrical testing concepts
- problem-solving techniques
- relevant job safety assessments or risk mitigation processes
- relevant legislation and regulations
- relevant manufacturer specifications
- relevant testing and tagging of portable and cord connected electrical apparatus
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the

time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- resources that reflect current industry practices in relation to conducting in-service safety testing of electrical cord connected equipment and cord assemblies
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to disconnect and reconnect electrical equipment connected to low voltage (LV) installation wiring.

It includes preparing electrical equipment for disconnecting and then reconnecting equipment connected to LV installation wiring. It also includes inspecting and testing the reconnected electrical equipment for safe operation, identifying and reporting electrical faults and providing status reports. This must be incidental to a primary or regular function of the workplace.

The unit excludes disconnecting or reconnecting circuits at a switchboard or to general electrical accessories (including switches, socket outlets and circuit protective devices), or installation of or alteration to any part of the fixed electrical wiring system (defined as electrical installation work).

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c.).

The skills and knowledge described in this unit may require a license to practice in the workplace where plant and equipment operate at voltage above 50 V a.c. or 120 V d.c. However other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Additional and/or other conditions may also apply under State and Territory legislation and regulations related to licencing, electrical work and work health and safety (WHS)/occupational health and safety (OHS) regulations, which must be confirmed prior to commencing this unit.

In some jurisdictions additional information related to licencing may be required on certification documentation. Further guidance can be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Competency Field

Restricted Licensing

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to disconnect electrical equipment

2 Disconnect electrical equipment

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 Electrical equipment disconnection is planned to ensure WHS/OHS policies and procedures are followed
- 1.2 Relevant person/s is consulted to ensure work is coordinated effectively with others involved at the worksite
- 1.3 Safety hazards which have not previously been identified are documented, risks assessed, and control measures determined and implemented in consultation with relevant person/s and in accordance with workplace procedures
- 1.4 Point of isolation of electrical equipment to be disconnected is determined
- 1.5 Tools, equipment and testing devices needed to carry out electrical work are obtained in accordance with workplace procedures and checked for correct operation and safety
- 2.1 WHS/OHS policies and workplace procedures are followed
- 2.2 Electrical equipment is isolated in accordance with relevant electrical installation industry standards and workplace procedures
- 2.3 Isolated equipment is confirmed as de-energised
- 2.4 Conductor connection sequence is recorded and labelled in accordance with workplace procedures

- 2.5 Visual inspection and checks of the electrical equipment and associated wiring are carried out in accordance with workplace procedures to detect any abnormal or obvious damage or fault
 - 2.6 Electrical equipment is disconnected from fixed wiring without damage to other components
 - 2.7 Disconnected conductors/cables are terminated in accordance with relevant industry standards to ensure they are safe and present no potential hazard
 - 2.8 Approval is obtained in accordance with workplace procedures from relevant person/s before any contingencies are implemented
- 3 Prepare to reconnect electrical equipment**
- 3.1 Reconnection is planned to ensure WHS/OHS policies and workplace procedures are followed
 - 3.2 Relevant person/s is consulted to ensure work is coordinated effectively with others involved in the work site
 - 3.3 Point of isolation of the circuit to which the electrical equipment to be connected is determined
 - 3.4 Replacement electrical equipment is selected on the basis of rating and specifications being the same as that of the original electrical equipment
 - 3.5 Appropriate person/s is consulted in the event that replacement electrical equipment is not available
 - 3.6 Original and/or replacement electrical equipment is inspected and tested to ensure it is safe to connect to the electrical supply and use
 - 3.7 Tools, equipment and testing devices needed to carry out electrical work, are obtained in accordance with workplace procedures and checked for correct operation and safety
- 4 Reconnect electrical equipment**
- 4.1 WHS/OHS policies and procedures are followed
 - 4.2 Measures are taken to ensure circuit to which electrical equipment is to be connected remains isolated and de-energised in accordance with relevant electrical installation industry standards and workplace procedures

- 4.3 Earth continuity of the equipment is tested to determine whether it is in accordance with relevant industry standards
 - 4.4 Insulation resistance of the equipment is tested to confirm that it is in accordance with relevant industry standards
 - 4.5 Appropriate person/s is consulted regarding any non-compliant conditions identified during testing
 - 4.6 Electrical equipment is connected in accordance with previously recorded conductor connection sequence and relevant industry standards
 - 4.7 Connections to the equipment are checked to confirm they are correct
 - 4.8 Continuity between exposed conductive parts of the equipment and the main earth or metal switchboard enclosure is confirmed
- 5 **Test the reconnected electrical equipment for safe operation**
 - 5.1 WHS/OHS policies and workplace procedures for the reinstatement of isolated circuits and electrical equipment is followed
 - 5.2 Supply is reinstated to equipment and checked in accordance with established procedures and industry requirements
 - 5.3 Arrangements are made with relevant person/s to test the operation of the electrical equipment in accordance with workplace procedures
 - 5.4 Operational non-conformances are identified and reported in accordance with workplace procedures
- 6 **Complete compliance documentation**
 - 6.1 Equipment status report/s are completed and relevant person/s notified in accordance with task requirements and workplace procedures
 - 6.2 Complete compliance documentation in accordance with industry standards and regulatory requirements

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Disconnection and reconnection of electrical equipment must include at least one of the following, and must be selected to align with the candidates' primary trade or work function:

- air conditioning/refrigeration equipment
- instrumentation equipment
- electronic equipment
- electrical equipment
- neon signs
- composite equipment
- control devices
- water heaters
- motors
- gas appliances
- electrical work associated with fixed wiring, circuits at a switchboard or to general electrical equipment, including switches, socket outlets, circuit protective devices etc
- in hazardous areas or on electrical equipment that is part of an explosion-protection technique
- where high fault currents are possible
- which are luminaires

MUST NOT INCLUDE:

disconnect/reconnect electrical equipment connected to supplies up to 1,000 volts (V) alternating current (a.c.) or 1,500 V direct current (d.c.) must not include the following:

Unit Mapping Information

No equivalent unit

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - selecting and using an appropriate range of personal protective equipment (PPE)
 - hazard identification
 - using risk control measures
 - using safe working practices when carrying out electrical disconnect/reconnect work
 - working safely with low voltage (LV) electrical installations
- determining electrical characteristics of electrical equipment
- selecting tools, equipment and testing devices
- identifying the point of isolation
- preparing to disconnect and reconnect electrical equipment
- disconnecting and reconnecting electrical equipment
- connecting circuits from the schematic diagrams
- connecting and using voltmeters and ammeters, including selecting the correct range in terms of magnitude and whether the supply is alternating current (a.c.) or direct current (d.c.)
- isolating, testing and tagging accessories
- connecting a simple electrical circuit, including supply, control switch and load
- measuring voltage and current within a simple circuit
- producing a wiring diagram of the connections used in following the schematic diagram
- connecting a simple circuit following a wiring diagram
- producing a schematic diagram from the wiring diagram
- using an analogue multimeter for voltage measurement ensuring the following: setting zero, correct scale, a.c. or d.c., polarity and magnitude, avoiding parallax error and estimating between division readings
- using a digital multimeter for voltage measurement ensuring the following: correct range and no active conductors are connected to any meter earth
- measuring resistance using a digital multimeter

- conducting insulation resistance tests using a handheld insulation tester after checking for zero and meter calibration
- checking the polarity of a three-core extension cord using a continuity tester
- measuring current using a clip-on (tong tester) taking each circuit conductor in turn
- terminating cables using stud, screw, tunnel and lug terminal types employing the correct preparation and the relevant terminating tools
- identifying the type and arrangement of circuits supplying equipment that is to be disconnected
- testing the availability of supply for electrical equipment about to be disconnected
- locating isolation device/s, including lockable adjacent switching device, and/or identification of fuse/circuit breaker at switchboard, and use of equipment schedules where provided
- determining the method of isolation to be used; which available device
- isolating a supply at a fuse, ensuring the fuse wedge is removed only after the electrical equipment is turned off and demonstrating why the empty wedge is replaced once the fusible link has been removed
- isolating a supply at a circuit breaker, ensuring the circuit breaker is locked and secured in the open position
- undertaking tests to determine if the electrical equipment is turned off when isolating at a fuse/circuit breaker
- using danger tags at the point of isolation
- identifying the type and arrangement of circuits supplying equipment that is to be disconnected from a single phase and/or multiphase supply of voltages up to 1,000 V a.c. or 1,500 V d.c.
- applying procedures that ensure the safe isolation of the supply to equipment which is to be disconnected
- disconnecting isolated equipment from fixed wiring with minimal damage to wiring system after ensuring no visible faults or damage, and the recording of conductor connection sequence
- applying termination practices in regard to disconnected wiring
- checking the new electrical equipment nameplate details against those of the electrical equipment being replaced
- visually inspecting and testing equipment's electrical characteristics using suitable test equipment to ensure equipment is safe to connect in regard to sufficiently high insulation resistance, arrangements for protection against indirect contact are undamaged and in place, appropriate ingress protection (IP) rating, and arrangements for protection against dangers of mechanical movement are undamaged and in place
- testing compliance of the electrical equipment, i.e. insulation resistance and continuity
- testing the disconnected electrical equipment for faults (open circuits, partial open circuits, short circuits, partial short circuits and earth faults), and recognise any unsatisfactory test results obtained identifying the type and arrangement of circuits supplying equipment that is to be reconnected to a single phase and/or multi-phase supply of voltages up to 1,000 V a.c. or 1,500 V d.c.
- reconnecting electrical equipment to fixed wiring with minimal damage to wiring system
- ensuring continuity between exposed conductive parts of the equipment and the main earth or

metal switchboard enclosure

- restoring supply after ensuring correct connections, and all safety requirements have been met
- testing the supply at the electrical equipment
- restoring all mechanical protection, e.g. terminal covers
- checking operation of reconnected equipment
- dealing with unplanned events/situations in accordance with workplace procedures and in a manner that minimises risk to personnel and equipment
- producing reports and documents to describe a suitable procedure to safely disconnect a component from a single-phase supply and/or multi-phase supply in accordance with workplace, industry and regulatory requirements
- producing reports and compliance documentation for the safe reconnection/commissioning of a component to the supply in accordance with workplace, industry and regulatory requirements
- completing required regulatory compliance documentation.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- the basic electrical circuit, including:
 - elements of a simple electric circuit (supply, control switch, protection device and load)
 - definition, the symbol and the abbreviation of the unit for electromotive force, potential difference, current and resistance
 - types of electrical load
 - need for devices to afford electrical protection and the mechanisms used in protection devices, including resetting
 - a.c supply (both single and multi-phase) and d.c. supply
 - need for isolating, testing and tagging electrical circuits
- relationships in an electrical circuit, including:
 - relationship between voltage, current and resistance
 - definition of power in electrical terms (for d.c. or resistive a.c. circuits)
 - electrical diagrams, including:
 - symbols used for fuse, circuit breaker, isolator, normally open contacts, normally closed contacts, coil, energy meter, a.c. motor and transformer
 - using a block diagram as means of developing concepts and understanding
 - function of single line diagrams, including their application in three phase systems
 - definition of a circuit or schematic diagrams
 - wiring diagrams
- test equipment selection and care, including:
 - fault currents and the implications of incorrectly connecting a meter to a high fault current

source

- category ratings of multimeters in terms of their breaking capacity (fault current interruption) and identification of the appropriate category of instrument for typical domestic work and for typical commercial work
- regulatory requirements in regard to the maintenance and testing of test instrumentation
- steps and procedures for the safe use, care and storage of electrical instruments
- selecting test equipment for given situations
- test equipment - voltage measurement, including:
 - voltage measurement - meters connected in parallel
- test equipment - resistance measurement, including:
 - insulation resistance, and the required minimum values for insulation resistance LV equipment (including the insulation resistance values for electrical equipment incorporating heating elements)
 - insulation resistance needs to be measured at higher than supply voltage and the voltages to be used
 - continuity and what a continuity tester does
- test equipment - current measurement, including advantage/s of the clip-on method of current measurement
- cable connections, including:
 - construction of typical power cables
 - principle of operation of the following types of terminals stud, screw, tunnel and lugs
 - cable preparation and terminating methods appropriate to each type of terminal, including any special requirements which apply
- protection for safety, including:
 - dangers associated with earth-faults
 - protection of persons against electric shock from earth-faults
 - maintaining a low earth-fault current path resistance
 - components in an earth-fault current path
 - regulatory issues/requirements/limitations in regard to working live
- safety testing preparation and procedures, including:
 - faulty earth-fault current paths
 - using safe working practices when carrying out fault-finding work
 - identification of earthing system components
 - unsatisfactory resistance of a fault current path
 - actions to rectify unsatisfactory resistance of an earth-fault current path or insulation
- isolating supplies, including:
 - regulatory requirements in regard to working de-energised, and ensuring and maintaining isolation
 - reasons for advising all personnel likely to be affected
 - preventing others wanting to remake supply
 - reason for isolation and approximate time of outage to allow planning of alternate

activities

- identification of the type and arrangement of circuits supplying equipment that is to be disconnected
- use of and reason for danger tags at the point of isolation
- reason for the following steps: testing on a known live supply, testing for isolation, retesting on a known live supply after confirming isolation
- disconnecting electrical equipment - LV, including:
 - identification of the type and arrangement of circuits supplying equipment that is to be disconnected from a single phase and/or multi-phase supply of voltages up to 1,000 V a.c. or 1,500 V d.c.
 - procedures that ensure the safe isolation of the supply to equipment which is to be disconnected
 - disconnection of isolated equipment from fixed wiring with minimal damage to wiring system after ensuring no visible faults or damage, and the recording of conductor connection sequence
- reconnecting electrical equipment - LV, including:
 - importance of checking the new electrical equipment nameplate details against those of the electrical equipment being replaced
 - need to visually inspect and test the equipment's electrical characteristics using suitable test equipment to ensure equipment is safe to connect in regard to sufficiently high insulation resistance, arrangements for protection against indirect contact are undamaged and in place, appropriate IP rating, and arrangements for protection against dangers of mechanical movement are undamaged and in place
 - procedures for equipment with unsatisfactory results - unsuitability for reconnection
 - identification of the type and arrangement of circuits supplying equipment that is to be reconnected to a single phase and/or multi-phase supply of voltages up to 1,000 V a.c. or 1,500 V d.c.
 - procedures ensuring isolation of supply
 - engaging appropriately qualified person to rectify any non-compliance
- produce documentation and reports in accordance with workplace, industry and regulatory requirements, including:
 - need to produce status reports and documents to locate and identify isolation mechanisms for a wide range of circuits and associated loads
 - production of reports and documents to use a suitable procedure to safely disconnect a component from a single-phase supply and/or multi-phase supply
 - content required in reports and documents used to safely determine the suitability of a component for reconnection to supply
 - production of reports and documents for the safe reconnection/commissioning of a component to the supply.
 - need to comply with regulatory compliance documentation requirements.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, including where not permissible under regulatory and licencing requirements, assessment must occur in suitable simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- resources used should reflect current industry practices in relation to disconnecting and reconnecting electrical equipment connected to a LV supply
- applicable documentation, including workplace procedures, equipment specifications, regulations, standards, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

CPC Construction, Plumbing and Services Training Package

Modification History

Version	Release Date	Comments
Release 6.3	6 May, 2021	<p>Minor update:</p> <p>Reinstatement of the following units of competency:</p> <ul style="list-style-type: none"> • CPCMCM8001 Plan and manage complex projects • CPCMCM8002 Manage the quality of projects and processes • CPCPDR3024 Maintain and service domestic treatment plants and onsite sewerage facilities • CPCPFS4023 Commission fire system pumpsets • CPCPFS4025 Commission fire alarm and detection system interface devices • CPCPFS4026 Commission firefighting appliances • CPCPFS4027 Commission fire sprinkler systems • CPCPFS5010 Design fire-compliant hydraulic services • CPCPPS5001 Design industrial gas systems • CPCSFS5008 Create detailed designs for fire detection and warning systems. <p>Qualifications:</p> <p>CPC10120 Certificate I in Construction</p> <ul style="list-style-type: none"> • Minor formatting correction. <p>CPC20220 Certificate II in Construction Pathways</p> <ul style="list-style-type: none"> • Unit CPCCVE1011 Undertake a basic construction project marked with an asterisk as a prerequisite requirement must be met. <p>CPC30120 Certificate III in Shopfitting</p> <p>Units:</p> <ul style="list-style-type: none"> • CPCCJN3100 Process materials to produce components using static machines • CPCCWC3004 Install suspended ceilings <p>marked with an asterisk as a prerequisite requirement must be met.</p> <p>CPC30220 Certificate III in Carpentry</p> <p>Removal of prerequisite asterisks from:</p>

	<ul style="list-style-type: none"> • CPCCOM1012 Work effectively and sustainably in the construction industry • CPCCOM1014 Conduct workplace communication in the unit lists. <p>Units:</p> <ul style="list-style-type: none"> • CPCCJN3100 Process materials to produce components using static machines, and • CPCCWC3004 Install suspended ceilings <p>marked with an asterisk as a prerequisite requirement must be met.</p> <p>CPC30820 Certificate III in Roof Tiling</p> <p>Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.</p> <p>CPC31020 Certificate III in Solid Plastering</p> <p>Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.</p> <p>CPC31220 Certificate III in Wall and Ceiling Lining</p> <p>Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.</p> <p>CPC31320 Certificate III in Wall and Floor Tiling</p> <p>Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.</p> <p>CPC31420 Certificate III in Construction Waterproofing</p> <ul style="list-style-type: none"> • Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met. • Unit CPCCCM2012 Work safely at heights added to the metadata unit grid. <p>CPC31920 Certificate III in Joinery</p> <p>Removal of prerequisite asterisks from</p> <ul style="list-style-type: none"> • CPCCOM1012 Work effectively and sustainably in the construction industry • CPCCOM1013 Plan and organise work and • CPCCOM1014 Conduct workplace communication. <p>Units:</p>
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		<ul style="list-style-type: none"> • CPCCCA3011 Refurbish timber sashes to window frames • CPCCOM2001 Read and interpret plans and specifications <p>marked with an asterisk as a prerequisite requirement must be met.</p> <p>CPC32320 Certificate III in Stonemasonry</p> <p>Removal of prerequisite asterisks from units:</p> <ul style="list-style-type: none"> • CPCCOM1012 Work effectively and sustainably in the construction industry • CPCCOM1013 Plan and organise work • CPCCOM1014 Conduct workplace communication. <p>Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.</p> <p>CPC33020 Certificate III in Bricklaying and Blocklaying</p> <p>Removal of prerequisite asterisks from units:</p> <ul style="list-style-type: none"> • CPCCOM1012 Work effectively and sustainably in the construction industry • CPCCOM1013 Plan and organise work • CPCCOM1014 Conduct workplace communication. <p>Unit CPCCOM2001 Read and interpret plans and specifications marked with an asterisk as a prerequisite requirement must be met.</p> <p>Units of Competency:</p> <p>CPCCB3010 Construct masonry arches</p> <ul style="list-style-type: none"> • Changes to Performance Evidence. <p>CPCCB3011 Construct curved walls</p> <ul style="list-style-type: none"> • Performance Criteria 3.6 updated. • Changes to Performance Evidence <p>CPCCB3013 Construct masonry structural systems</p> <ul style="list-style-type: none"> • Change to Performance Criteria 4.1. <p>CPCPIG3022 Install and commission domestic irrigation pumps</p> <ul style="list-style-type: none"> • Changes to Knowledge Evidence. <p>Refer to Companion Volume Implementation Guide for further information.</p>
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Release 6.2	10 March, 2021	<p>Minor update:</p> <p>Qualifications:</p> <p>CPC10120 Certificate I in Construction</p> <ul style="list-style-type: none"> • <i>Change of unit title BSBSUS211 Participate in environmentally sustainable work practices in Elective units to BSBSUS211 Participate in sustainable work practices.</i> <p>CPC20120 Certificate II in Construction</p> <ul style="list-style-type: none"> • <i>Imported unit codes updated in Elective list:</i> <ul style="list-style-type: none"> • <i>RIICCM210D Install trench support to RIICCM210E Install trench support</i> • <i>RIIWMG203D Drain and dewater civil construction site to RIIWMG203E Drain and dewater civil construction sites.</i> <p>CPC20220 Certificate II in Construction Pathways</p> <ul style="list-style-type: none"> • <i>Imported unit codes updated in Elective list:</i> <ul style="list-style-type: none"> • <i>RIICCM210D Install trench support to RIICCM210E Install trench support</i> • <i>RIIWMG203D Drain and dewater civil construction site to RIIWMG203E Drain and dewater civil construction sites.</i> <p>CPC30420 Certificate III in Demolition</p> <ul style="list-style-type: none"> • <i>Imported unit code in Elective units updated from RIIRTM203D Work as a safety observer/spotter to RIIRTM203E Work as a safety observer/spotter.</i> <p>CPC32420 Certificate III in Plumbing</p> <ul style="list-style-type: none"> • <i>Addition of CPCPCM2052 Weld mild steel using oxy-acetylene equipment and CPCPCM2055 Work safely on roofs to unit grid.</i> <p>CPC40120 Certificate IV in Building and Construction</p> <ul style="list-style-type: none"> • <i>Imported Elective unit BSBWOR501 Manage personal work priorities and professional development updated to BSBPEF501 Manage personal and professional development.</i> <p>CPC40920 Certificate IV in Plumbing and Services</p> <ul style="list-style-type: none"> • <i>Change of unit title CPCPWT3027 Connect irrigation systems from drinking water service in Group B electives to CPCPWT3027 Install backflow prevention devices.</i>
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		<p>Units of Competency:</p> <p>CPCCBC5011 Manage environmental management practices and processes in building and construction</p> <ul style="list-style-type: none"> • <i>PC 2.4 has been amended to read: 'Evaluate a new project to determine its impact on existing environmental planning obligations.'</i> <p>CPCCOM1014 Conduct workplace communication</p> <ul style="list-style-type: none"> • <i>Correction to unit mapping metadata.</i> <p>CPCCPB3016 Install and finish columns</p> <ul style="list-style-type: none"> • <i>Removed duplicated comma in Knowledge Evidence.</i> <p>CPCCSP3001 Apply float and render to straight and curved surfaces</p> <ul style="list-style-type: none"> • <i>Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.</i> <p>CPCCSP3007 Apply plaster by projection machine</p> <ul style="list-style-type: none"> • <i>Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.</i> <p>CPCCWC3001 Install and finish plasterboard and fibre cement sheeting to curved wall and ceiling substrates</p> <ul style="list-style-type: none"> • <i>Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.</i> <p>CPCCWC3002 Install and finish plasterboard and fibre cement sheeting to arch substrate</p> <ul style="list-style-type: none"> • <i>Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies and procedures in the construction industry to CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry.</i> <p>CPCCWC3003 Install dry wall passive fire-rated systems</p> <ul style="list-style-type: none"> • <i>Correction to prerequisite unit code from CPPWHS2001 Apply WHS requirements, policies</i>
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		<p>wiring.</p> <p>CPCPMS3033 Install small bore heating systems</p> <ul style="list-style-type: none"> • <i>Correction to prerequisite unit code from CPCPCM2043A Carry out WHS requirements to CPCPCM2043 Carry out WHS requirements.</i> <p>CPCPPS5033 Design vacuum drainage systems</p> <ul style="list-style-type: none"> • <i>Removed duplicated heading from Performance Evidence.</i> <p>CPCPRF3021 Receive roofing materials</p> <ul style="list-style-type: none"> • <i>Correction to prerequisite unit code from CPCPCM2043A Carry out WHS requirements to CPCPCM2043 Carry out WHS requirements.</i> <p>CPCPSN3011 Plan the layout of a residential sanitary plumbing system and fabricate and install sanitary stacks</p> <ul style="list-style-type: none"> • <i>Removed duplicative point from Knowledge Evidence: WHS requirements for fabricating and installing sanitary stacks.</i> <p>CPCPWT3027 Install backflow prevention devices</p> <ul style="list-style-type: none"> • <i>Correction to prerequisite unit code from CPCPCM2043A Carry out WHS requirements to CPCPCM2043 Carry out WHS requirements.</i> <p>Refer to Companion Volume Implementation Guide for further information.</p>
Release 6.1	15 January, 2021	<p>Minor update</p> <p>Qualifications:</p> <p>CPC20120 Certificate II in Construction</p> <ul style="list-style-type: none"> • <i>Imported unit code corrected in elective list: RIICCM210E Install trench support to RIICCM210D Install trench support.</i> <p>CPC20220 Certificate II in Construction Pathways</p> <ul style="list-style-type: none"> • <i>Imported unit code corrected in Group I elective list: RIWHS205D Control traffic with stop-slow bat to RIWHS205E Control traffic with stop-slow bat.</i> <p>CPC30220 Certificate III in Carpentry</p> <ul style="list-style-type: none"> • <i>Unit code corrected in Group A - Specialist Electives: CPCCCO3048* Construct tilt panels on site to CPCCON3048* Construct tilt panels on site.</i>

		<p>CPC31220 Certificate III in Wall and Ceiling Lining</p> <ul style="list-style-type: none"> • <i>Unit code corrected in elective list: CPCCSH3007 Install prefabricated internal shopfitting units to CPCSHHP3007 Install prefabricated internal shopfitting units.</i> <p>CPC31920 Certificate III in Joinery</p> <ul style="list-style-type: none"> • <i>Unit codes corrected in Group B - General Electives list:</i> <ul style="list-style-type: none"> • <i>CPCCSH3001 Fabricate shopfitting components using CNC machines to CPCSHHP3001 Fabricate shopfitting components using CNC machines</i> • <i>CPCCSH3005 Apply and trim decorative additions to shopfitting and components to CPCSHHP3005 Apply and trim decorative additions to shopfittings and components</i> • <i>CPCCSH3006 - Prepare shopfittings and surfaces and apply liquid finishes to CPCSHHP3006 - Prepare shopfittings and surfaces and apply liquid finishes.</i> <p>CPC32620 Certificate III in Roof Plumbing</p> <ul style="list-style-type: none"> • <i>Included CPCCCM2008 Erect and dismantle restricted height scaffolding and CPCCCM2012 Work safely at heights in the metadata unit grid.</i> <p>CPC32820 Certificate III in Fire Protection</p> <ul style="list-style-type: none"> • <i>Unit code corrected in core unit list: CPCPCM2019 Carry out interactive workplace communication to CPCPCM2039 Carry out interactive workplace communication.</i> <p>CPC40120 Certificate IV in Building and Construction</p> <ul style="list-style-type: none"> • <i>Addition of 3 units of competency to the General Electives:</i> <ul style="list-style-type: none"> • <i>CPCBIM4001 Plan to comply with BIM requirements for construction work.</i> • <i>CPCBIM4002 Use BIM processes to carry out construction work</i> • <i>CPCBIM4003 Contribute to BIM deliverables for construction work.</i> <p>CPC50320 Diploma of Building and Construction (Management)</p> <ul style="list-style-type: none"> • <i>Addition of 3 units of competency to the General Electives:</i> <ul style="list-style-type: none"> • <i>CPCBIM4001 Plan to comply with BIM</i>
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		<p><i>requirements for construction work.</i></p> <ul style="list-style-type: none"> • <i>CPCBIM4002 Use BIM processes to carry out construction work</i> • <i>CPCBIM4003 Contribute to BIM deliverables for construction work.</i> • <i>Updated imported elective unit from CPPBDN5012A Produce and present 3-D to models of small-scale building designs to CPPBDN5101 Produce digital 3-D models of building designs.</i> <p>CPC80215 Graduate Diploma of Building Surveying</p> <ul style="list-style-type: none"> • <i>Deleted: CPC80215 Graduate Diploma of Building Surveying is deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>Units of Competency:</p> <p>CPCCCJN3004 Manufacture and assessmle joinery components</p> <ul style="list-style-type: none"> • <i>Rectified PC 3.1: 'Check components for accuracy, quality and suitabilityby dry-assembling components in their assembled positions'.</i> <p>CPCCCBS8001 Manage building surveying risks and ensure compliance with ethical and professional standards</p> <ul style="list-style-type: none"> • <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>CPCCCBS8002 Manage information on construction methods, materials and services for a building surveying team</p> <ul style="list-style-type: none"> • <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>CPCCCBS8003 Manage information on compliance requirements for a building surveying team</p> <ul style="list-style-type: none"> • <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>CPCCCBS8004 Advise on compliance of building design documentation</p> <ul style="list-style-type: none"> • <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i>
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		<p>CPCCBS8005 Manage planning approval processes for all building types</p> <ul style="list-style-type: none"> Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive. <p>CPCCBS8006 Manage building approval processes for all building types</p> <ul style="list-style-type: none"> <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>CPCCBS8007 Monitor building work and advise on compliance issues</p> <ul style="list-style-type: none"> <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>CPCCBS8008 Conduct and manage the completion of building inspections and audits</p> <ul style="list-style-type: none"> <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>CPCCBS8009 Lead a building surveying team</p> <ul style="list-style-type: none"> <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>CPCCBS8010 Liaise and coordinate with head contractors on building projects</p> <ul style="list-style-type: none"> <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>CPCCBS8011 Assess and advise on performance-based solutions for all types of buildings</p> <ul style="list-style-type: none"> <i>Deleted due to low enrolments and lack of industry demand, as per the Australian Industry and Skills Committee (AISC) directive.</i> <p>Refer to Companion Volume Implementation Guide for further information.</p>
Release 6.0	8 January, 2021	<p>Building Surveying</p> <p>Revision of 1 qualification</p> <ul style="list-style-type: none"> CPC60121 Advanced Diploma of Building Surveying

		<p>Development of 1 new unit of competency</p> <p>Revision of 16 units of competency.</p> <p>Business Information Modelling (BIM)</p> <p>Development of 3 new units of competency.</p> <p>Skill sets</p> <p>Development of 2 new Skill Sets:</p> <ul style="list-style-type: none"> • CPCSS00005 Provide Building Surveying Services for Residential Buildings up to Three Storeys • CPCSS00006 Apply BIM Processes to Construction Work. <p>Minor update</p> <p>CPC40920 Certificate IV in Plumbing Services</p> <ul style="list-style-type: none"> • Typographical error rectified in unit CPCPWT4023. <p>Refer to Companion Volume Implementation Guide for further information.</p>
Release 5.1	23 December, 2020	<p>Bricklaying, Blocklaying and Stonemasonry</p> <p>2 Qualifications and 9 Units of competency</p> <p>Qualifications</p> <p>CPC32320 Certificate III in Stonemasonry</p> <ul style="list-style-type: none"> • <i>Minor changes to Core unit list for clarity. Correction to Release 1 version history.</i> <p>CPC33020 Certificate III in Bricklaying and Blocklaying</p> <ul style="list-style-type: none"> • <i>Title change in unit list for CPCCBL3017 Carry out tuck pointing brickwork.</i> <p>Units of competency</p> <p>CPCCBL3009 Install flashings and damp proof course</p> <ul style="list-style-type: none"> • <i>Knowledge Evidence formatted for clarity.</i> <p>CPCCBL3010 Construct masonry arches</p> <ul style="list-style-type: none"> • <i>Performance Evidence formatted for clarity.</i> <p>CPCCBL3011 Construct curved walls</p> <ul style="list-style-type: none"> • <i>Knowledge Evidence formatted for clarity</i> <p>CPCCBL3018 Install aerated autoclaved concrete products</p> <ul style="list-style-type: none"> • <i>Knowledge Evidence formatted for clarity</i>

		<p>CPCST2005 Carry out load slinging of off-site materials</p> <ul style="list-style-type: none"> • <i>Knowledge Evidence formatted for clarity.</i> <p>CPCST4004 Initiate the heritage works process</p> <ul style="list-style-type: none"> • <i>Typographical error corrected in Assessment Conditions.</i> <p>CPCST4005 Prepare drawings for heritage works</p> <ul style="list-style-type: none"> • <i>Unit Sector changed. Element 2.4 added to Performance Criteria. Foundation Skills formatted for clarity.</i> <p>CPCST4006 Prepare report for heritage restoration work</p> <ul style="list-style-type: none"> • <i>Knowledge Evidence formatted for clarity</i> <p>CPCST4007 Construct a fire brick wall and arch using refractory materials</p> <ul style="list-style-type: none"> • <i>Elements and Performance Criteria 1.1 rewritten for clarity.</i> <p>Building and Construction</p> <p>6 revised qualifications and 9 revised units of competency</p> <p>Qualifications</p> <p>CPC10120 Certificate I in Construction</p> <ul style="list-style-type: none"> • <i>Unit list typographical error corrected in code CPCWHS2001.</i> <p>CPC20220 Certificate II in Construction Pathways</p> <ul style="list-style-type: none"> • <i>Group I: General elective unit list is updated by removing "A" from the unit codes CPCPCM2043 and CPCPRF2022 and adding CPCPCM2055 Work safely on roofs as prerequisite requirement.</i> <p>CPC40120 Certificate IV in Building and Construction</p> <ul style="list-style-type: none"> • <i>Imported unit BSBPEF501 Manage personal and professional development replaced by BSBWOR501 Manage personal work priorities and professional development. Units listed alphanumerically.</i> <p>CPC40320 Certificate IV in Building Project Support</p> <ul style="list-style-type: none"> • <i>Imported unit BSBPMG522 Undertake project work replaced by BSBPMG430 Undertake project work.</i> <p>CPC50320 Diploma of Building and Construction</p>
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(Management)

- *Correction to titles for imported elective units BSBOPS502 and BSBOPS505. Imported elective units BSBLDR522 Manage people performance and BSBLDR523 Lead and manage effective workplace relationships removed from Elective units.*

CPC60220 Advanced Diploma of Building and Construction (Management)

- *Mapping statement corrected. General elective units listed alphanumerically.*

Units of competency

CPCCCBC4002 Manage work health and safety in the building and construction workplace

- *Typographical error in Element and Performance Criteria 2.4 corrected.*

CPCCCBC4003 Select, prepare and administer a construction contract

- *Typographical error in Element and Performance Criteria 3.3 corrected*

CPCCCBC4007 Plan building and construction work

- *Performance Evidence formatted for clarity.*

CPCCCBC4008 Supervise site communication and administration processes for building and construction projects

- *Typographical error in Element 4 corrected. Typographical corrections in Performance Evidence.*

CPCCCBC4010 Apply structural principles to residential and commercial constructions

- *Correction to mapping*

CPCCCBC4022 Supervise tilt-up work

- *Weight corrected in Performance Evidence.*

CPCCCBC5005 Select and manage building and construction contractors

- *Performance Evidence formatted for clarity.*

CPCCCBC6013 Evaluate concrete performance for multi-storey buildings

- *Minor typographical error corrected in Foundation Skills.*

CPCSUS5001 Develop workplace policies and procedures for sustainability

- *Knowledge Evidence formatted for clarity.*

Building Completions

18 revised Units of competency

CPCCPB3019 Inspect equipment for serviceability

- *Knowledge Evidence formatted for clarity.*

CPCCRT2001 Handle roof tiling materials

- *Correction to Elements and Performance Evidence 4.1 and 4.2.*

CPCCRT3005 Slate a roof

- *Performance Evidence and Knowledge Evidence formatted for clarity. Changes to Performance Evidence.*

CPCCRT3006 Fix shingles to roofs and facades

- *Performance Evidence formatted for clarity.*

CPCCSP3003 Apply trowelled texture coat finishes

- *Minor edits to formatting in Element and Performance Criteria.*

CPCCSP3004 Restore and renovate solid plasterwork

- *Performance Evidence formatted for clarity.*

CPCCWC3002 Install and finish plasterboard and fibre cement sheeting to arch substrate

- *Formatting correction to Elements and Performance Criteria*

CPCCWF3005 Install decorative tiling

- *Knowledge Evidence formatted for clarity.*

CPCCWF3006 Install mosaic tiling

- *Correction to Elements and Performance Criteria 1 through 3.*

CPCCWF3008 Tile pools and spas

- *Knowledge Evidence formatted for clarity.*

CPCCWP2001 Handle waterproofing materials and components

- *Change to Unit Sector.*

CPCCWP2002 Use waterproofing tools and equipment

- *Change to Unit Sector.*

CPCCWP2004 Prepare surfaces for waterproofing application

- *Addition of points 1.6 and 1.7 to the Performance Criteria. Change to Unit Sector.*

CPCCWP3001 Apply waterproofing system to below ground level wet areas

- *Knowledge Evidence formatted for clarity. Change to Unit Sector.*

CPCCWP3002 Apply waterproofing process to internal wet areas

- *Changes to Performance Evidence and Unit Sector*

CPCCWP3003 Apply waterproofing process to external above-ground wet areas

- *Change to Unit Sector.*

CPCCWP3004 Apply waterproofing remedial processes

- *Change to Unit Sector.*

CPCCWP3005 Assess construction waterproofing processes

- *Change to Unit Sector.*

Carpentry and Joinery

1 revised Qualification and 9 Units of competency

Qualification

CPC30220 Certificate III in Carpentry

- *Rectified qualification to reflect endorsed version.*

Units of competency

CPCCCA2002 Use carpentry tools and equipment

- *Knowledge Evidence formatted for clarity.*

CPCCCA3005 Construct ceiling frames

- *Performance Criteria 3.3 removed*

CPCCCA3006 Erect roof trusses

- *Performance Evidence formatted for clarity*

CPCCCA3007 Construct Pitched Roofs

- *Title change. Knowledge Evidence formatted for clarity.*

CPCCCA3025 Read and interpret plans, specifications and drawings for carpentry work

- *Knowledge Evidence formatted for clarity*

CPCCCA3028 Erect and dismantle formwork for footings and slabs on ground

- *Equivalency changed to non-equivalent.*

CPCCJN3002 Use computer-controlled machinery

- *Typographical error in Mapping corrected for clarity*

CPCCJN3003 Manufacture components for doors, windows and frames

- *Performance Evidence formatted for clarity.*

CPCWHS3001 Identify construction work hazards and select risk control strategies

- *Minor typographical error corrected in Elements and Performance Criteria 3.5. Knowledge Evidence is formatted for clarity.*

Concreting

Revised 3 units of competency

CPCCON3055 Install topping slabs

- *Performance Evidence and Knowledge Evidence corrected.*

CPCCON3056 Conduct concrete pump delivery operations

- *Performance Criteria 3.1 rectified.*

CPCCON3057 Core concrete

- *Minor edits to formatting.*

Construction Pathways

1 revised Qualification and 5 Units of competency

Qualification

CPCCCO2013 Carry out concreting to simple forms

- *Knowledge Evidence formatted for clarity.*

Units of competency

CPCCOM1012 Work effectively and sustainably in the construction industry

- *Rectified to reflect endorsed version.*
CPCCOM1013 Plan and organise work
- *Rectified to reflect endorsed version.*
CPCCOM1014 Conduct workplace communication
- *Rectified to reflect endorsed version.*
CPCCOM1015 Carry out measurements and calculations
- *Rectified to reflect endorsed version.*
CPCCOM2001 Read and interpret plans and specifications
- *Knowledge Evidence formatted for clarity.*

Demolition

1 revised Qualification and 4 Units of competency

Qualification

CPC41020 Certificate IV in Demolition

- *Inclusion of CPCCWH2001 Apply WHS requirements, policies and procedures in the construction industry to the General Elective units*

Units of competency

CPCCDE3014 Remove non-friable asbestos

- *Rectified pre-requisite unit.*

CPCCDE3024 Operate mobile plant on suspended floors on demolition sites

- *Performance Criteria numbering rectified in Elements 3 and 6.*

CPCCDE3025 Operate remote-controlled plant on demolition sites

- *Rectified naming of Element 5.*

CPCCDE3026 Operate excavators at ground level to demolish building elements

- *Minor typographical errors rectified.*

High Risk Work

4 revised Qualifications and 10 Units of competency

Qualifications

CPC30720 Certificate III in Rigging

- *Typographical error in unit code corrected for clarity.*

CPC30920 Certificate III in Scaffolding

- *Typographical error in unit code corrected for clarity.*

CPC31120 Certificate III in Steelfixing

- *Typographical error in unit code corrected for clarity.*

CPC32920 Certificate III in Construction Crane Operations

- *Typographical error in unit code corrected for clarity.*

Units of competency

CPCCCO2014 Carry out concrete work

- *Correction to Foundation Skills.*

CPCCLDG3001 Licence to perform dogging

- *Minor edits to formatting*

CPCCLSF2001 Licence to erect, alter and dismantle scaffolding basic level

- *Minor edits to formatting.*

CPCCLSF4001 Licence to erect, alter and dismantle scaffolding advanced level

- *Minor edits to formatting.*

CPCCLTC4001 Licence to operate a tower crane

- *Minor edits to formatting.*

CPCCLTC4002 Licence to operate a self-erecting tower crane

- *Missing text in Element and Performance Criteria Point 2 corrected.*

CPCCRI3013 Perform intermediate rigging

- *Correction to Unit Mapping.*

CPCCRI3015 Perform advanced tilt-up slab erection

- *Minor edits to formatting.*

CPCCSC2002 Erect and dismantle basic scaffolding

- *Minor edits to formatting*

CPCCSC3001 Erect and dismantle intermediate scaffolding

- *Minor edits to formatting.*

Painting and Decorating

1 revised Qualification and 5 Units of competency

Qualification

CPC30620 Certificate III in Painting and Decorating

- *Typographical error in unit code corrected for clarity*

Units of competency

CPCCPD2013 Remove and replace doors and door and window components

- *Correction to Elements and Performance Criteria. Removal of duplicate Performance Criteria 4.5.*

CPCCPD3021 Prepare existing coated surface for painting

- *Minor edits to formatting.*

CPCCPD3023 Apply texture coat paint finishes by brush, roller and spray

- *Minor edits to formatting.*

CPCCPD3025 Match specific paint colours

- *Correction to unit mapping.*

CPCCPD3027 Remove and apply wallpaper

- *Minor edits to formatting.*

Plumbing

5 revised Qualifications and 78 units of competency.

Qualifications

CPC20720 Certificate II in Drainage

- *Correction to unit title CPCPCM3022 in Elective units*

CPC32420 Certificate III in Plumbing

- *Addition of CPCPRF2024 Fabricate roof coverings*

for curved structures to Group D Elective units.

CPC32620 Certificate III in Roof Plumbing

- *Addition of CPCPRF2024 Fabricate roof coverings for curved structures to Elective units.*

CPC32720 Certificate III in Gas Fitting

- *Title changed for CPCPCM3022 and an asterisk added to MEM11011 and MEM16006 for clarity.*

CPC32820 Certificate III in Fire Protection

- *Correction to unit title CPCPCM3022 in Elective units.*

Units of competency

CPCCPF3031

- *Knowledge Evidence is formatted for clarity.*

CPCCSV5009 Assess the impact of fire on building materials

- *Changes to the Application.*

CPCPCM2043 Carry out WHS requirements

- *Knowledge Evidence formatted for clarity.*

CPCPCM2043 Carry out WHS requirements

- *Knowledge Evidence formatted for clarity.*

CPCPCM2045 Handle and store plumbing materials

- *Correction to the Application*

CPCPCM2049 Cut using oxy acetylene equipment

- *Minor title change. Changes to Elements and Performance Criteria 2.3 and 3.1.*

CPCPCM2053 Weld using metal arc welding equipment

- *Performance Evidence formatted for clarity.*

CPCPCM2055 Work safely on roofs

- *Performance Evidence formatted for clarity.*

CPCPCM3022 Weld polymer pipes using fusion method

- *Changes to Pre-requisite unit.*

CPCPCM3023 Fabricate and install non-ferrous pressure piping

- *Changes to Element and Performance Criteria 2.2 and 3.5.*

CPCPCM3024 Prepare simple drawings

- *Knowledge Evidence formatted for clarity.*

CPCPCM3025 Install trench support

- *Typographical errors corrected in Element 1.3 and 3.1.*

CPCPCM4011 Carry out work-based risk control processes

- *Unit Sector added to unit.*

CPCPCM4012 Estimate and cost work

- *Changes to Elements and Performance Criteria 2.6.*

CPCPCM4013 Produce 2-D architectural drawings using design software

- *Changes to Knowledge Evidence.*

CPCPCM5010 Design complex sanitary plumbing and drainage systems

- *Changes to Elements and Performance Criteria 3.1 and 3.5.*

CPCPCM5011 Design complex cold water systems

- *Change to Elements and Performance Criteria 3.6.*

CPCPCM5012 Design complex stormwater and roof drainage systems

- *Changes to Application and Elements and Performance Criteria 4.4.*

CPCPCM5013 Design complex (non-solar) heated water systems

- *Changes to Elements and Performance Criteria 1.8.*

CPCPCM5014 Design sewer infrastructure systems

- *Changes to Elements and Performance Criteria 5.4.*

CPCPDR2021 Locate and clear blockages

- *Change to Elements and Performance Criteria 1.2 and 3.1.*

CPCPDR2025 Install stormwater and sub-soil drainage systems and drain work site

- *Changes to Elements and Performance Criteria 4.1.*

CPCPDR2026 Install prefabricated inspection openings and inspection chambers

- *Changes to Elements and Performance Criteria 3.2.*

CPCPDR3021 Plan layout and install below ground

sanitary drainage systems

- *Changes to Pre-requisite unit and Elements and Performance Criteria 1.3.*

CPCPDR4011 Design and size sanitary drainage systems

- *Performance Evidence formatted for clarity.*

CPCPDR4011 Design and size sanitary drainage systems

- *Performance Evidence formatted for clarity.*

CPCPDR4012 Design and size stormwater drainage systems

- *Element 2 title corrected. Performance Evidence formatted for clarity.*

CPCPFS2021 Connect static storage tanks for fixed fire protection systems

- *Duplicate Element and Performance Criteria 1.3 deleted.*

CPCPFS2022 Install portable fire equipment

- *Typographical error corrected in Element 2.1.*

CPCPFS3030 Design fire sprinkler systems using pre-calculated charts and tables

- *Performance Evidence formatted for clarity.*

CPCPFS3034 Install control valve assemblies, actuating devices and local alarms

- *Changes to Elements and Performance Criteria 1.1.*

CPCPFS3036 Install special hazard systems

- *Change to Elements and Performance Criteria 2.3.*

CPCPFS3038 Test and maintain fire hydrant and hose reel installations

- *Knowledge Evidence formatted for clarity.*

CPCPFS3040 Conduct basic functional testing of water-based fire-suppression systems

- *Changes to Elements and Performance Criteria 1.1, 2.1, 3.5 and 3.8.*

CPCPFS3041 Inspect and test fire pumpsets

- *Changes to Elements and Performance Criteria 2.1, 2.3 and 3.8. Performance Evidence is formatted for clarity.*

CPCPFS3042 Conduct annual routine service of complex water-based fire-suppression systems

- *Changes to Elements and Performance Criteria 1.3, 2.1, and 2.2.*

CPCPFS3043 Conduct functional water flow testing

- *Typographical error corrected in Element 1.6.*

CPCPFS3046 Test the integrity of water-based fire protection systems using pressure

- *Performance Evidence formatted for clarity.*

CPCPFS3049 Conduct preventive maintenance on fixed fire pumpsets

- *Typographical errors corrected in Pre-requisite unit and Element and Performance Criteria 1.3.*

CPCPFS4022 Commission and maintain special hazard fire suppression systems

- *Changes to Foundation Skills. Typographical error corrected in Elements and Performance Criteria 4.2.*

CPCPFS4024 Design residential fire sprinkler systems

- *Changes to Pre-requisite unit.*

CPCPFS4025 Commission fire alarm and detection system interface devices

- *Performance Evidence formatted for clarity.*

CPCPFS4027 Commission fire sprinkler systems

- *Knowledge Evidence formatted for clarity.*

CPCPFS5012 Design fire hydrant and hose reel systems

- *Changes to Foundation Skills. Typographical errors corrected in Elements and Performance Criteria 2.1, 2.2, and 2.7.*

CPCPGS3049 Install gas appliance flues

- *Performance Evidence formatted for clarity.*

CPCPGS3052 Maintain Type A gas appliances

- *Changes to Elements and Performance Criteria 3.4.*

CPCPGS3056 Size and install consumer gas piping systems

- *Changes to Application*

CPCPGS3060 Install LPG storage of aggregate storage capacity exceeding 500 litres and less than 8 kl

- *Change to Pre-requisite unit.*

CPCPGS3061 Install and commission Type A gas appliances

- *Changes to Elements and Performance Criteria 1 and 4.1.*

CPCPGS4023 Install, commission and service Type B gas appliances

- *Typographical error corrected in Element and Performance Criteria 6.2.*

CPCPIG2021 Design domestic urban irrigation systems

- *Changes to Application and Elements and Performance Criteria 1.6.*

CPCPIG3022 Install and commission domestic irrigation pumps

- *Knowledge Evidence formatted for clarity.*

CPCPMS3032 Select and fit insulation and sheathing

- *Changes to Application and Typographical errors corrected in Elements and Performance Criteria 3.3.*

CPCPMS3034 Install and test medical gas pipeline systems

- *Changes to Application and Elements and Performance Criteria 1, 2, 3.*

CPCPMS3035 Install and test ducting systems

- *Typographical error corrected in Element and Performance Criteria 3.4.*

CPCPMS3036 Install air handling units

- *Knowledge Evidence formatted for clarity.*

CPCPMS3037 Install and commission a single head split system air conditioning

- *Elements and Performance Criteria 3.9 and 3.10 is deleted.*

CPCPMS3038 Install air conditioning control equipment

- *Typographical error corrected in Element 2.1.*

CPCPMS3039 Maintain mechanical services equipment

- *Typographical error corrected in Application and Element 2.1.*

CPCPMS4022 Commission air and water systems

- *Knowledge Evidence formatted for clarity.*

CPCPMS5012 Design sound attenuated hydraulic services

- *Knowledge Evidence formatted for clarity.*

CPCPMS5013 Design hydronic heating and cooling systems

- *Performance Evidence formatted for clarity.*

CPCPPS5000 Design gas bulk storage systems

- *Element and Performance Criteria 2.9 rewritten for clarity.*

CPCPPS5014 Locate and maintain piping systems

- *Performance Evidence formatted for clarity.*

CPCPPS5025 Design grey water re-use systems

- *Typographical error corrected in Element 1.7.*

CPCPPS5033

- *Changes to Pre-requisite unit. Performance Evidence is reformatted for clarity.*

CPCPRF2022 Select and install roof sheeting and wall cladding

- *Typographical error corrected in Element 5 and Performance Evidence reformatted for clarity.*

CPCPRF2024 Fabricate roof coverings for curved structures

- *Typographical error corrected in Element and Performance Criteria 3.4.*

CPCPRF3024 Install roof components

- *Typographical error corrected in Element and Performance Criteria 1.1.*

CPCPRF3027 Select and install a heritage roof system

- *Typographical error corrected in Element 1.1.*

CPCPSN3011 Plan the layout of a residential sanitary plumbing system and fabricate and install sanitary stacks

- *Change to Pre-requisite unit. Correction to Knowledge Evidence.*

CPCPSN3011 Plan the layout of a residential sanitary plumbing system and fabricate and install sanitary stacks

- *Change to Pre-requisite unit. Correction to Knowledge Evidence.*

CPCPSN3026 Install sewerage pumpsets

- *Typographical error corrected in Element 1.1.*

CPCPWT3022 Install and commission water heating systems and adjust controls and devices

- *Minor change in Performance Evidence for clarity.*

CPCPWT3027 Install backflow prevention devices

- *Typographical error in Elements and Performance Criteria 1 corrected.*

CPCPWT3029 Install water pipe systems

- *Changes to Knowledge Evidence.*

CPCPWT3030 Install home fire sprinkler systems

- *Typographical error corrected in Element 1.1.*

CPCSFS5017 Create detailed designs for foam suppression systems

- *Application reformatted and typographical error in Knowledge Evidence corrected.*

Shopfitting

3 revised Units of competency

CPCSHP3002 Fabricate and assemble shopfront structures

- *Rectified numbering of Performance Criteria.*

CPCSHP3009 Demolish shopfronts and bulkheads

- *Performance Criteria numbering rectified and Modification History rectified.*

CPCSHP3010 Prepare shop floors for new coverings

- *Minor edits to formatting.*

Signs and Graphics

1 revised Qualification and 1 revised Unit of competency

Qualification

CPC30216 Certificate III in Signs and Graphics

- *Imported units updated to current releases*

Unit of competency

	<ul style="list-style-type: none"> • <i>CPCCSG3006 Apply gilding to signs</i> <p>Swimming Pool and Spa</p> <p>3 revised Units of competency</p> <p>CPCSPS4002 Select, procure and store construction materials for swimming pool and spa projects</p> <ul style="list-style-type: none"> • <i>Minor edits to formatting.</i> <p>CPCSPS4006 Apply sprayed concrete to shape and finish swimming pools and spas</p> <ul style="list-style-type: none"> • <i>Correction to Knowledge Evidence.</i> <p>CPCSPS4010 Lay swimming pool and spa coping</p> <ul style="list-style-type: none"> • <i>Performance Evidence corrected for clarity.</i>
Release 5.0	<p>25 November, 2020</p> <p>Bricklaying, Blocklaying and Stonemasonry</p> <p>Two revised qualifications:</p> <ul style="list-style-type: none"> • CPC32320 Certificate III in Stonemasonry • CPC33020 Certificate III in Bricklaying and Blocklaying. <p>One deleted qualification:</p> <ul style="list-style-type: none"> • CPC31611 Certificate III in Paving <p>Fifty-six revised units of competency.</p> <p>Four new units of competency.</p> <p>Building and Construction</p> <p>Five revised qualifications:</p> <ul style="list-style-type: none"> • CPC40120 Certificate IV in Building and Construction • CPC40320 Certificate IV in Building Project Support • CPC50220 Diploma of Building and Construction (Building) • CPC50320 Diploma of Building and Construction (Management) • CPC60220 Advanced Diploma of Building and Construction (Management). <p>Three deleted qualifications:</p> <ul style="list-style-type: none"> • CPC40408 Certificate IV in Building & Construction (Sales)

	<ul style="list-style-type: none">• CPC40611 Certificate IV in Building & Construction (Specialist Trades)• CPC40708 Certificate IV in Building & Construction (Trade Contracting). <p>Sixty-seven revised units of competency.</p> <p>Two new units of competency.</p> <p>Two units of competency proposed for deletion.</p> <p>Building Completions</p> <p>Five revised qualifications:</p> <ul style="list-style-type: none">• CPC30820 Certificate III in Roof Tiling• CPC31020 Certificate III in Solid Plastering• CPC31220 Certificate III in Wall and Ceiling Lining• CPC31320 Certificate III in Wall and Floor Tiling• CPC31420 Certificate III in Construction Waterproofing. <p>Sixty revised units of competency.</p> <p>Two new units of competency.</p> <p>Four deleted units of competency.</p> <p>Construction Pathways</p> <p>Three revised qualifications:</p> <ul style="list-style-type: none">• CPC10120 Certificate I in Construction• CPC20120 Certificate II in Construction• CPC20220 Certificate II in Construction Pathways <p>Fourteen revised units of competency.</p> <p>Two new units of competency.</p> <p>Carpentry and Joinery</p> <p>Two revised qualifications:</p> <ul style="list-style-type: none">• CPC31920 Certificate III in Joinery• CPC30220 Certificate III in Carpentry. <p>Thirty-six revised units of competency.</p> <p>Five new units of competency.</p> <p>Demolition</p> <p>Two revised qualifications:</p> <ul style="list-style-type: none">• CPC30420 Certificate III in Demolition• CPC41020 Certificate IV in Demolition. <p>Nineteen revised units of competency.</p>
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		<p>Four new units of competency.</p> <p>High Risk Work</p> <p>Four revised qualifications:</p> <ul style="list-style-type: none"> • CPC30720 Certificate III in Rigging • CPC30920 Certificate III in Scaffolding • CPC31120 Certificate III in Steelfixing • CPC32920 Certificate III in Construction Crane Operations. <p>Two deleted qualifications:</p> <ul style="list-style-type: none"> • CPC30511 Certificate III in Dogging • CPC31712 Certificate III in Post-Tensioning. <p>Thirty-five revised units of competency.</p> <p>Painting and Decorating</p> <p>One revised qualification:</p> <ul style="list-style-type: none"> • CPC30620 Certificate III in Painting and Decorating. <p>Eighteen revised units of competency.</p> <p>One new unit of competency.</p> <p>Minor releases</p> <p>CPC30318 Certificate III in Concreting</p> <ul style="list-style-type: none"> • Correction of Unit Title in Packaging Rules advice for unit CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry. <p>Addition of website address for Western Australia State Training Authority.</p> <p>CPCCSG3006 Apply gilding to signs</p> <p>Elements and Performance Criteria '3.2 Adhesive is mixed with colour according to job requirements and applied to prepared surface.' moved to 4.1 as an additional subpoint.</p> <p>Imported units updated to latest releases.</p>
		<ul style="list-style-type: none"> •
Release 4.0	17 January 2019	<p>Endorsement for the revision of 1 qualification, which is equivalent to its superseded version in CPC08:</p> <ul style="list-style-type: none"> • CPC30318 Certificate III in Concreting. <p>Revision of 32 equivalent units of competency.</p>

		<p>Minor release</p> <p>The following elective imported units of competency were updated in CPC30116 Certificate III in Shopfitting:</p> <ul style="list-style-type: none"> • BSBSMB421 supersedes and is equivalent to BSBSMB406 • MSFGG3036 supersedes and is non-equivalent to MSFGG3017.
Release 3.0	February 2017	<p>Endorsement for the revision of 2 non-equivalent units of competency:</p> <ul style="list-style-type: none"> • CPCCPB3014 Install bulk insulation and pliable membrane products • CPCCPB3027 Install ceiling products
Release 2.1	8 December 2016	<p>Endorsement for:</p> <p>Addition of one unit of competency:</p> <ul style="list-style-type: none"> • CPCCWHS1001 Prepare to work safely in the construction industry
Release 2	9 Sept 2016	<p>Endorsement for:</p> <ul style="list-style-type: none"> • revision of two qualifications non-equivalent to their superseded versions in CPC08: <ul style="list-style-type: none"> • CPC30115 Certificate III in Shopfitting • CPC30215 Certificate III in Signs and Graphics • addition of 10 shopfitting units of competency: <ul style="list-style-type: none"> • CPCCSH3001 Fabricate shopfitting components using CNC machines • CPCCSH3002 Fabricate and assemble shopfront structures • CPCCSH3003 Assemble and install shopfront structures • CPCCSH3004 Assemble internal shopfitting units and prepare for transport • CPCCSH3005 Apply and trim decorative additions to shopfittings and components • CPCCSH3006 Prepare shopfittings and surfaces and apply liquid finishes • CPCCSH3007 Install prefabricated internal shopfitting units • CPCCSH3008 Install internal shop walls and fixtures • CPCCSH3009 Demolish shopfronts and bulkheads • CPCCSH3010 Prepare shop floors for new

		<p>coverings</p> <ul style="list-style-type: none"> • addition of 17 signs and graphics units of competency: <ul style="list-style-type: none"> • CPCCSG3001 Design and lay out digital signs for production • CPCCSG3002 Produce and apply vinyl signs • CPCCSG3003 Colour manage signs • CPCCSG3004 Print digital signs • CPCCSG3005 Engrave signs • CPCCSG3006 Apply gilding to signs • CPCCSG3007 Paint lines and scrolls • CPCCSG3008 Hand draw chalkboards and showcards • CPCCSG3009 Screen-print signs • CPCCSG3010 Hand render pictorials • CPCCSG3011 Install LED technology into signs • CPCCSG3012 Fabricate signs • CPCCSG3013 Paint letters and decorative effects for signs • CPCCSG3014 Manufacture gas-charged glass-formed illuminated signs • CPCCSG3015 Produce airbrushed signs • CPCCSG3016 Prepare surfaces for signs • CPCCSG3017 Erect and install signs • addition of 10 units of competency and their assessment requirements, included as core or nominated elective units in the above two qualifications, consisting of: <ul style="list-style-type: none"> • CPCCCM2006 Apply basic levelling procedures • CPCCCM2010 Work safely on scaffolding higher than two metres • CPCCCM3001 Operate elevated work platforms up to 11 metres • CPCCCM3003 Work safely around electrical sources, services and assets • CPCCCM3004 Identify and apply information in construction plans, drawings and specifications • CPCCCM3005 Calculate costs of construction work • CPCCCM3006 Carry out levelling operations • CPCCJN3001 Process materials to produce components using static machines
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		<ul style="list-style-type: none"> • CPCCWC3004 Install suspended ceilings • CPCCWHS3001 Identify construction work hazards and select risk control strategies.
Release 1.1	16 Dec 2015	<p>ISC upgrade to reflect industry-agreed modification to a component of the performance evidence in each of the following CPC60115 Diploma of Building Surveying units of competency:</p> <ul style="list-style-type: none"> • CPCCBS6002 Research and evaluate construction methods and materials for commercial buildings to three storeys • CPCCBS6005 Assess and advise on compliance of design documentation for commercial buildings to three storeys • CPCCBS6007 Process planning applications for commercial buildings up to three storeys • CPCCBS6009 Process building applications for commercial buildings up to three storeys • CPCCBS6011 Conduct and report on building surveying audits of commercial buildings up to three storeys • CPCCBS6013 Conduct and report on initial construction inspections of commercial buildings up to three storeys • CPCCBS6015 Conduct and report on advanced and final inspections of commercial buildings up to three storeys • CPCCBS6017 Monitor and advise on construction and compliance upgrade work on buildings up to three storeys.
Release 1	5 June 2015	

Credit Arrangements

At the time of endorsement of CPC Construction, Plumbing and Services Training Package no national credit arrangements exist between qualifications in CPC and higher education qualifications.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

CPCSS00005 Provide Building Surveying Services for Residential Buildings up to Three Storeys

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Version 6.0.
- Updated to reflect current industry requirements for the building surveying scope to incorporate residential buildings up to three storeys and a maximum of 2,000 square metres.
- Two new units included in the skill set:
- CPCCBS6103 Identify and apply legal and ethical requirements to building surveying functions
 - CPCCBS6118 Assess and advise on performance solutions for Class 1 and 10 buildings to three storeys.

Description

This skill set covers the competencies required by restricted building surveyors or certifiers who implement statutory building surveying requirements or provide advisory building surveying services limited to Class 1 and 10 buildings as defined in the National Construction Code (NCC), up to three storeys and not exceeding 2,000 square metres in floor area.

Pathways Information

Completion of this skill set provides credit towards CPC60120 Advanced Diploma of Building Surveying.

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this Skill Set at the time of publication.

Skill Set Requirements

- CPCCBS6101 Research and evaluate construction methods and materials for Class 1 and 10 buildings to three storeys
- CPCCBS6103 Identify and apply legal and ethical requirements to building surveying functions

- CPCCBS6104 Assess and advise on compliance of design documentation for Class 1 and 10 buildings to three storeys
- CPCCBS6107 Prepare planning and development applications for buildings to three storeys
- CPCCBS6108 Process building applications for Class 1 and 10 buildings to three storeys
- CPCCBS6110 Conduct and report on building surveying audits of Class 1 and 10 buildings to three storeys
- CPCCBS6112 Conduct and report on initial construction inspections of Class 1 and 10 buildings to three storeys
- CPCCBS6114 Conduct and report on advanced and final inspections of Class 1 and 10 buildings to three storeys
- CPCCBS6118 Assess and advise on performance solutions for Class 1 and 10 buildings to three storeys

Target Group

This skill set is for people currently working as, or intending to work as, private or municipal building surveyors specifically limited to Class 1 and 10 buildings as defined in the NCC.

Suggested words for Statement of Attainment

These units from CPC Construction, Plumbing and Services Training Package meet industry requirements for restricted building surveyors to undertake building surveying services limited to Class 1 and 10 buildings as defined in the NCC.

CPCSS00006 Apply BIM Processes to Construction Work

Modification History

Release 1 This Skill Set first released with CPC Construction, Plumbing and Services Training Package Release 6.0.

Description

This Skill Set addresses the skills and knowledge required to apply Building Information Modelling (BIM) processes when conducting construction work on a BIM project.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pathways Information

Units from this Skill Set can contribute to credit towards CPC40120 Certificate IV in Building and Construction and CPC50320 Diploma of Building and Construction (Management).

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this Skill Set at the time of publication.

Skill Set Requirements

- CPCBIM4001 Plan to comply with BIM requirements for construction work
- CPCBIM4002 Use BIM processes to carry out construction work
- CPCBIM4003 Contribute to BIM deliverables for construction work

Target Group

This Skill Set is for builders, tradespersons, project and site managers who work on projects that incorporate BIM interaction, collaboration and deliverables.

Suggested words for Statement of Attainment

These units of competency from the CPC Construction, Plumbing and Services Training Package meet industry requirements for applying Building Information Modelling (BIM) processes to construction.