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BCCPL3001B Install water mains pipelines

Unit Descriptor

This unit specifies the competency required to install water mains pipelines to service urban and rural community water. It includes the minimum criteria for competency assessment.

This unit includes testing of mains pipe systems.

Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

Element	Performance Criteria
Elements define the essential outcomes of a unit of competency.	Performance criteria specify the level of performance required to demonstrate achievement of the element.
1 Plan and prepare	1.1 Work instructions, including plans, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and applied to the allotted task
	1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
	1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
	1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
	1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

2	Set out and excavate	2.1	Work area and materials are prepared to support the efficient installation of the pipe work
		2.2	Dewatering requirements are determined and applied
		2.3	Location, alignment direction, level and grade of mains pipe system is determined from job drawings/ specifications
		2.4	Works are set out to specification
		2.5	Plant operator is advised of excavation requirements and levels are monitored
		2.6	Mains pipe system support mechanism is installed in accordance with plans, specifications and standards

3	Install mains pipeline	3.1	Pipes are lowered and placed in position to design specifications
		3.2	Pipes are joined in accordance with manufacturers specifications
		3.3	Pipes are placed and valves, fittings and flow control devices are fitted in accordance with drawings and specifications
		3.4	Alignment level and grade is checked continuously for conformance with design plans and specifications
		3.5	Side support and/or overlay is positioned beside the pipes
		3.6	Mains pipe system support structure is checked
		3.7	Backfill procedure is monitored to ensure work is completed to specification, where specified
		3.8	Valve chambers, minor structures and thrust blocks are constructed
4	Test mains pipe system	4.1	Test is performed to relevant authority requirements as determined by the specifications
		4.2	Mains pipe system test procedures are performed establishing pressurisation, functionality and serviceability
		4.3	Test results are recorded and reported
5	Clean up	5.1	Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan
		5.2	Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

Unit Scope

- Mains pipe systems are to include pressurised mains water pipelines
- Types of mains pipe systems are to include in-ground and may include above ground
- Mains pipes may be constructed from but not limited to PVC, UPVC, poly, DICL, steel and copper
- Valves and flow control devices are to include but not be limited to stop valves, flow control valves and may include non return valves, pressure control valves, energy dissipaters and air release valves
- Installation procedures are to include but not be limited to selecting size, type and material of pipe, bedding down pipes, positioning pipes, checking alignment, level and grade and may include repair work
- Testing procedures may include but not be limited to pressure, visual straightness, ovality, tolerance, air and water
- Bedding materials may include aggregate and sand
- Support systems may include bedding for in-ground trenches or concrete shoulders for above ground pipes
- Pipe joining methods are to include but not be limited to rubber ring, solvent welded and may include arc welded and mechanical jointed
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, barricades, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements

Unit Scope (continued)	• Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
Safety (OH&S)	• OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances • Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices • Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with underground services, other machines, personnel, restricted access barriers, traffic control, working in proximity to others, worksite visitors and the public • Hazards and risks may include but not be limited to uneven/unstable terrain, trees, underground services, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials • Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation
Environmental Requirements	• Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management
Quality Requirements	• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction

Statutory/Regulatory Authorities	• State/Regulatory Authorities may Federal, State and Local Authorities
Tools and equipment	• Tools and equipment are to include but not be limited to levelling equipment, shovels, lifting equipment, crow bars, hammers, grinders, jointing equipment and may include oxy-acetylene equipment, scaffolding and saws
Materials	• Materials are to include but not be limited to pipes, concrete, backfill and bedding materials
Communications	• Communications are to include but not be limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task
Information	• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, material safety data sheets (MSDS) and diagrams or sketches • Safe work procedures or equivalent related to the installation of mains pipe systems • Regulatory/legislative requirements pertaining to the installation of mains pipe systems • Manufacturers' specifications and instructions • Organisation work specifications and requirements. • Instructions issued by authorised organisational or external personnel • Relevant Australian Standards

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Installation of a minimum of 100 metres of water mains pipeline to design specifications
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

Relationship to other units

- Pre-requisite units are:

  BCCCM1001C Follow OH&S policies and procedures

  Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

Specific knowledge required to achieve the performance criteria

- A knowledge of
  - Civil construction terminology
  - Site and equipment safety requirements
  - Mains pipe systems and installation procedures
  - Confined space entry requirements
  - Dewatering
  - Concrete and concrete fabrication
  - Processes for interpreting engineering drawings
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures including testing procedures
  - Mains water pressure
  - Valves and flow control devices
  - Water reticulation
  - Processes for the calculation of pipeline grades and percentages
  - Sedimentation and erosion controls
  - Excavation/trench safety
  - Site isolation and traffic control responsibilities and authorities
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - JSA's/Safe work method statement

The context of assessment

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

Methods of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and

accuracy of performance together with application of underpinning knowledge

- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

Specific resource requirements for this unit

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to the installation of mains pipe systems
  - hand and power tools, plant and equipment appropriate to the installation of mains pipe systems
  - specifications and work instructions

… End …

BCCPL3002B Install stormwater systems

Unit Descriptor

This unit specifies the competency required to install stormwater systems to service urban and rural community storm water requirements. It includes the minimum criteria for competency assessment.

This unit includes testing of stormwater systems.

Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

Element	Performance Criteria
Elements define the essential outcomes of a unit of competency.	Performance criteria specify the level of performance required to demonstrate achievement of the element.
1 Plan and prepare	1.1 Work instructions, including plans, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and applied to the allotted task
	1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
	1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
	1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
	1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

2	Set out and excavate	2.1	Work area and materials are prepared to support the efficient installation of the pipe work
		2.2	Dewatering requirements are determined and applied
		2.3	Location, alignment direction, level and grade of stormwater system is determined from job drawings/ specifications
		2.4	Works are set out to specification
		2.5	Plant operator is advised of excavation requirements and levels are monitored
		2.6	Stormwater system bedding is installed in accordance with plans, specifications and standards

3	Install stormwater system	3.1	Pipes are lowered and placed in position to design specifications
		3.2	Pipes are joined in accordance with manufacturers specifications
		3.3	Alignment level and grade is checked continuously for conformance with design plans and specifications
		3.4	Side support and/or overlay is positioned beside the pipes
		3.5	Inspection openings are fitted in accordance with job specifications
		3.6	Backfill procedure is monitored to ensure work is completed to specification, where specified
4	Test stormwater system		Test is performed to relevant authority requirements as determined by the specifications
			Stormwater system test procedures are performed establishing functionality and serviceability
			Test results are recorded and reported
5	Clean up	5.1	Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan
		5.2	Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

Unit scope

- Types of stormwater systems are to include only in-ground
- Stormwater pipes may be constructed from but not limited to reinforced concrete (RCP), PVC, steel, fibre reinforced concrete (FRC) and DICL
- Installation procedures are to include but not be limited to selecting size, type and material of pipe, bedding down pipes, positioning pipes, checking alignment, level and grade, fitting inspection holes and may include repair work where required
- Testing procedures may include but not be limited to visual straightness, ovality, tolerance, air and water
- Bedding materials may include aggregate and sand
- Pipe joining methods are to include but not be limited to rubber ring, solvent welded and may include arc welded and mechanical jointed
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, barricades, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas

Safety (OH&S)	• OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances • Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices • Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with underground services, other machines, personnel, restricted access barriers, traffic control, working in proximity to others, worksite visitors and the public • Hazards and risks may include but not be limited to uneven/unstable terrain, trees, underground services, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation • Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
Environmental Requirements	• Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management
Quality Requirements	• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction
Statutory/Regulatory Authorities	• State/Regulatory Authorities may Federal, State and Local Authorities

Tools and equipment	• Tools and equipment are to include but not be limited to levelling equipment, shovels, lifting equipment, crow bars, hammers, grinders, jointing equipment and may include oxy-acetylene equipment, scaffolding and saws
Materials	• Materials are to include but not be limited to pipes, concrete, backfill and bedding materials
Communications	• Communications are to include but not be limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task
Information	• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, material safety data sheets (MSDS) and diagrams or sketches • Safe work procedures or equivalent related to the installation of stormwater systems • Regulatory/legislative requirements pertaining to the installation of stormwater systems • Manufacturers' specifications and instructions • Organisation work specifications and requirements. • Instructions issued by authorised organisational or external personnel • Relevant Australian Standards

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Installation of a minimum of 100 metres of stormwater pipe to design specifications
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

Relationship to other units

- Pre-requisite units are:

  BCCCM1001C Follow OH&S policies and procedures

  Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

Specific knowledge required to achieve the performance criteria

- A knowledge of
  - Site and equipment safety requirements
  - Stormwater systems and installation procedures
  - Civil construction terminology
  - Confined space entry requirements
  - Dewatering
  - Concrete and concrete fabrication
  - Processes for interpreting engineering drawings
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Processes for the calculation of pipeline grades and percentages
  - Sedimentation and erosion controls
  - Excavation/trench safety
  - Site isolation and traffic control responsibilities and authorities
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - JSA's/Safe work method statement

The context of assessment

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

Methods of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

Specific resource requirements for this unit

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to the installation of stormwater systems
  - hand and power tools, plant and equipment appropriate to the installation of stormwater systems
  - specifications and work instructions

… End …

BCCPL3003B Install sewer pipelines

Unit Descriptor

This unit specifies the competency required to install sewer pipelines to service urban and rural community sewerage requirements. It includes the minimum criteria for competency assessment.

This unit includes testing of sewer pipelines.

Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

Element	Performance Criteria
Elements define the essential outcomes of a unit of competency.	Performance criteria specify the level of performance required to demonstrate achievement of the element.
1 Plan and prepare	1.1 Work instructions, including plans, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and applied to the allotted task
	1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
	1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
	1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
	1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

2	Set out and excavate	2.1	Work area and materials are prepared to support the efficient installation of the pipe work
		2.2	Dewatering requirements are determined and applied
		2.3	Location, alignment direction, level and grade of sewer pipeline are determined from job drawings/ specifications
		2.4	Works are set out to specification
		2.5	Plant operator is advised of excavation requirements and levels are monitored
		2.6	Sewer pipeline bedding is installed in accordance with plans, specifications and standards
3	Install sewer pipeline	3.1	Pipes are lowered and placed in position to design specifications
		3.2	Pipes are joined in accordance with manufacturers specifications
		3.3	Pipes are placed and valves, fittings and flow control devices are fitted in accordance with drawings and specifications
		3.4	Alignment level and grade is checked continuously for conformance with design plans and specifications
		3.5	Side support and/or overlay is positioned beside the pipes
		3.6	Sewer pipeline system support structure is checked
		3.7	Backfill procedure is monitored to ensure work is completed to specification, where required
		3.8	Manholes, inspection and valve chambers, minor structures and thrust blocks are constructed
4	Test sewer pipeline	4.1	Test is performed to relevant authority requirements as determined by the specifications
		4.2	Sewer system test procedures are performed establishing functionality and serviceability
		4.3	Test results are recorded and reported
5	Clean up	5.1	Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan
		5.2	Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Types of sewer pipelines are to include only in-ground
- Sewer pipes may be constructed from but not limited to DICL, UPVC and clay
- Valves and flow control devices are to include but not be limited to stop valves, non return valves, flow control valves, air release valves, waste and leak detection meters
- Installation procedures are to include but not be limited to selecting size, type and material of pipe, bedding down pipes, positioning pipes, checking alignment, level and grade and may include repair work
- Testing procedures may include but not be limited to visual straightness, ovality, tolerance, air and water
- Bedding materials may include aggregate and sand
- Pipe joining methods are to include but not be limited to rubber ring, solvent welded and may include arc welded and mechanical jointed
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, barricades, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas

Safety (OH&S)	• OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances • Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices • Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with underground services, other machines, personnel, and restricted access barriers, traffic control, working in proximity to others, worksite visitors and the public • Hazards and risks may include but not be limited to uneven/unstable terrain, trees, underground services, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials • Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation • Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
Environmental Requirements	• Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management
Quality Requirements	• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction
Statutory/Regulatory Authorities	• State/Regulatory Authorities may Federal, State and Local Authorities

Tools and equipment	• Tools and equipment are to include but not be limited to levelling equipment, shovels, lifting equipment, crow bars, hammers, grinders, jointing equipment and may include oxy-acetylene equipment, scaffolding and saws
Materials	• Materials are to include but not be limited to pipes, concrete, backfill and bedding materials
Communications	• Communications are to include but not be limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task
Information	• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, material safety data sheets (MSDS) and diagrams or sketches • Safe work procedures or equivalent related to the installation of sewer pipelines • Regulatory/legislative requirements pertaining to the installation of sewer pipelines • Manufacturers' specifications and instructions • Organisation work specifications and requirements. • Instructions issued by authorised organisational or external personnel • Relevant Australian Standards

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Installation of a minimum of 100 metres of sewer pipeline to design specifications
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

Relationship to other units

- Pre-requisite units are:

  BCCCM1001C Follow OH&S policies and procedures

  Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

Specific knowledge required to achieve the performance criteria

- A knowledge of
  - Site and equipment safety requirements
  - Sewer pipelines and installation procedures
  - Civil construction terminology
  - Processes for the calculation of pipeline grades and percentages
  - Sedimentation and erosion control
  - Excavation/trench safety
  - Confined space entry requirements
  - Dewatering
  - Concrete and concrete fabrication
  - Processes for interpreting engineering drawings
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures including testing procedures
  - Valves and flow control devices
  - Site isolation and traffic control responsibilities and authorities
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - JSA's/Safe work method statement

The context of assessment

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

Methods of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

Specific resource requirements for this unit

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to the installation of sewer pipelines
  - hand and power tools, plant and equipment appropriate to the installation of sewer pipelines
  - specifications and work instructions

… End …

BCCPL3004B Install pre-cast gully pits

Unit Descriptor

This unit specifies the competency required to install pre-cast gully pits to enable inspection and maintenance of pipe systems. It includes the minimum criteria for competency assessment.

This unit includes setting out, installing, rendering, modifying and repairing access facilities.

Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

Element	Performance Criteria
Elements define the essential outcomes of a unit of competency.	Performance criteria specify the level of performance required to demonstrate achievement of the element.
1 Plan and prepare	1.1 Work instructions, including plans, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and applied to the allotted task
	1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
	1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
	1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
	1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

2	Install gully pits	2.1	Plant operator is advised of excavation and base preparation requirements
		2.2	Location and positioning of gully pit is determined from plans and drawings
		2.3	Work area is safely set out to design specifications
		2.4	Ingress of water is controlled by dewatering
		2.5	Main components of the pre-cast unit are positioned, fabricated or installed to design specifications
		2.6	Finished surface is sealed by rendering where specified
		2.7	Auxiliary components or modifications are positioned and attached to pre-cast unit according to design specifications where specified
		2.8	New and existing gully pits are inspected for damage or wear and repaired in accordance with specifications
3	Clean up	3.1	Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan
		3.2	Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

Unit scope

- Gully pits are to include but not be limited to pre-cast unit sections
- Gully pit use is to include only stormwater systems
- Installation procedures are to include but not be limited to selecting size, type and material of pit, positioning gully pits, rendering, attaching auxiliary components, making or attaching modifications and repair work
- Auxiliary components are to include but not be limited to covers and may include steps, conversion slabs and benching

Unit scope (continued)

- Location of gully pits are to include but not be limited to roads, verges and may include private properties
- Dewatering methods may include but not be limited to wells, trenches, sumps, pits, submersible pumps, vacuum pumps, surface pumps and sludge pumps
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, barricades, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas

Safety (OH&S)

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with underground services, other machines, personnel, restricted access barriers, traffic control, working in proximity to others, worksite visitors and the public
- Hazards and risks may include but not be limited to uneven/unstable terrain, underground services, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials

Safety (OH&S) (continued)	• Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation
	• Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
Environmental Requirements	• Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management
Quality Requirements	• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction
Statutory/Regulatory Authorities	• Statutory/regulatory authorities may include statutory/regulatory Government authorities, Local Government statutory authorities
Tools and equipment	• Tools and equipment are to include but not be limited to levelling equipment, shovels, lifting equipment, hammers, grinders and may include oxy-acetylene equipment, scaffolding and trowels
Materials	• Materials are to include but not be limited to concrete, bedding materials, pre-cast components jointing materials (silicon, mastic or epoxy) and cement render
Communications	• Communications are to include but not be limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task

Information

- Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, material safety data sheets (MSDS) and diagrams or sketches
- Safe work procedures or equivalent related to the installation of gully pits
- Regulatory/legislative requirements pertaining to the installation of gully pits
- Manufacturers' specifications and instructions
- Organisation work specifications and requirements.
- Instructions issued by authorised organisational or external personnel
- Relevant Australian Standards

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Installation of a minimum of two gully pits for stormwater systems to design specifications
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

Relationship to other units

- Pre-requisite units are:

  BCCCM1001C Follow OH&S policies and procedures

  Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

Specific knowledge required to achieve the performance criteria

- A knowledge of
  - Site and equipment safety requirements
  - Gully pits
  - Civil construction terminology
  - Sedimentation and erosion control
  - Excavation/trench safety
  - Stormwater systems
  - Confined space entry requirements
  - Dewatering
  - Concrete and concrete fabrication
  - Processes for interpreting engineering drawings
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - JSA's/Safe work method statement

The context of assessment

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

Methods of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

Specific resource requirements for this unit

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to the installation of gully pits
  - hand and power tools, plant and equipment appropriate to the installation of gully pits
  - specifications and work instructions

… End …

BCCPL3005B Install pre-cast access chambers

Unit Descriptor

This unit specifies the competency required to install pre-cast access chambers to enable inspection and maintenance of pipe systems. It includes the minimum criteria for competency assessment.

This unit includes setting out, installing, rendering, modifying and repairing access facilities.

Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

Element	Performance Criteria
Elements define the essential outcomes of a unit of competency.	Performance criteria specify the level of performance required to demonstrate achievement of the element.
1 Plan and prepare	1.1 Work instructions, including plans, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and applied to the allotted task
	1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
	1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
	1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
	1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

2	Install access chambers	2.1	Plant operator is advised of excavation and base preparation requirements
		2.2	Location and positioning of access chamber is determined from plans and drawings
		2.3	Work area is safely set out to design specifications
		2.4	Ingress of water is controlled by dewatering
		2.5	Main components of the pre-cast unit are positioned, fabricated or installed to design specifications
		2.6	Finished surface is sealed by rendering where specified
		2.7	Auxiliary components or modifications are positioned and attached to pre-cast unit according to design specifications where specified
		2.8	New and existing access chambers are inspected for damage or wear and repaired in accordance with specifications
3	Clean up	3.1	Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan
		3.2	Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

Unit scope

- Access chambers are to include but not be limited to pre-cast unit sections
- Access chamber use is to include sewerage and stormwater pipelines
- Installation procedures are to include but not be limited to selecting size, type and material of chamber, positioning access chambers, rendering, attaching auxiliary components, making or attaching modifications and repair work
- Auxiliary components are to include but not be limited to covers and may include steps, conversion slabs and benching

Unit scope (continued)

- Location of access chambers are to include but not be limited to roads, verges and may include private properties
- Dewatering methods may include but not be limited to wells, trenches, sumps, pits, submersible pumps, vacuum pumps, surface pumps and sludge pumps
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, barricades, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas

Safety (OH&S)

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with underground services, other machines, personnel, restricted access barriers, traffic control, working in proximity to others, worksite visitors and the public
- Hazards and risks may include but not be limited to uneven/unstable terrain, underground services, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials

Safety (OH&S) (continued)	• Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation • Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
Environmental Requirements	• Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management
Quality Requirements	• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction
Statutory/Regulatory Authorities	• State/Regulatory Authorities may Federal, State and Local Authorities
Tools and equipment	• Tools and equipment are to include but not be limited to levelling equipment, shovels, lifting equipment, hammers, grinders and may include oxy-acetylene equipment, scaffolding and trowels
Materials	• Materials are to include but not be limited to concrete, bedding materials, pre-cast components jointing materials (silicon, mastic or epoxy) and cement render
Communications	• Communications are to include but not be limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task

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- Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, material safety data sheets (MSDS) and diagrams or sketches
- Safe work procedures or equivalent related to the installation of access chambers
- Regulatory/legislative requirements pertaining to the installation of access chambers
- Manufacturers' specifications and instructions
- Organisation work specifications and requirements.
- Instructions issued by authorised organisational or external personnel
- Relevant Australian Standards

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Installation of a minimum of two access chambers to design specifications
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

Relationship to other units

- Pre-requisite units are:

  BCCCM1001C Follow OH&S policies and procedures

  Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

Specific knowledge required to achieve the performance criteria

- A knowledge of
  - Site and equipment safety requirements
  - Access chambers
  - Civil construction terminology
  - Sedimentation and erosion control
  - Excavation/trench safety
  - Sewerage systems
  - Confined space entry requirements
  - Dewatering
  - Concrete and concrete fabrication
  - Processes for interpreting engineering drawings
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - JSA's/Safe work method statement

The context of assessment

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

Methods of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

Specific resource requirements for this unit

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to the installation of access chambers
  - hand and power tools, plant and equipment appropriate to the installation of access chambers
  - specifications and work instructions

… End …