



Australian Government

Department of Education, Employment and Workplace Relations

CPCCB3012A Construct fireplaces and chimneys

Release: 1

CPCCB3012A Construct fireplaces and chimneys

Modification History

Not Applicable

Unit Descriptor

Unit descriptor This unit of competency specifies the outcomes required to construct brick fireplaces and chimneys in various types and styles of buildings. It includes planning, preparation, set out and construction requirements of the work.

Application of the Unit

Application of the unit This unit of competency supports achievement of skills for laying of bricks to construct fireplaces and chimneys, which includes working with others and as a member of a team.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units	CPCCOHS2001A Apply OHS requirements, policies and procedures in the construction industry
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Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work.	<p>1.1. Work instructions, including plans, specifications, quality requirements and operational details, are obtained, confirmed and applied from relevant information to determine the required bricklaying and blocklaying tasks.</p> <p>1.2. Safety (OHS) requirements are followed in accordance with safety plans and policies.</p> <p>1.3. Signage and barricade requirements are identified and implemented.</p> <p>1.4. Plant, tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement.</p> <p>1.5. Material quantity requirements are calculated in accordance with plans, specifications and quality requirements.</p> <p>1.6. Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use.</p> <p>1.7. Environmental requirements are identified for the project in accordance with environmental plans and statutory and regulatory authority obligations, and are applied.</p>
2. Set out and prepare base.	<p>2.1. Set out area is correctly located and footing is checked for conformity to dimensions and location as per job drawings and specifications for fireplaces and chimneys.</p> <p>2.2. Fireplace base is set out to correct measurements and location to job drawings.</p>
3. Construct base.	<p>3.1. Mortar mix is prepared and checked for conformity to specifications and standards.</p> <p>3.2. Bricks, blocks and stone are laid to set out for base in accordance with specifications and standards.</p> <p>3.3. Bricks and stone laid to line and level and constructed in accordance with specifications and standards.</p>
4. Construct hearth and firebox.	<p>4.1. Damp proof courses are installed to specifications and in accordance with standards.</p> <p>4.2. Bricks, blocks and stone are laid to form hearth to designed shape, pattern, job drawings and specifications.</p>

ELEMENT	PERFORMANCE CRITERIA
5. Construct firebox and face brickwork.	<p>5.1. Specified materials for firebox and face brickwork are selected to specifications.</p> <p>5.2. Firebox is constructed to form shape for rear and side walls to specifications.</p> <p>5.3. Face brickwork is laid to form shape of openings to designed dimensions and finish of drawings and specifications.</p> <p>5.4. Lintel is installed to specifications.</p> <p>5.5. Facework is laid to bond, pattern and colour finish to wall and aligned to specification.</p> <p>5.6. Protrusions and mantelpiece are formed and finished to designed shape and specifications.</p> <p>5.7. Plumb and level are maintained for straight work.</p>
6. Form throat and chimney shaft.	<p>6.1. Work platform is erected in accordance with regulatory authorities' and workplace requirements.</p> <p>6.2. Throat is formed, parged and shaped for firebox and chimney design and specifications, and constructed in accordance with specifications and standards.</p> <p>6.3. Parging to flue is completed to specifications.</p> <p>6.4. Brick and stone are laid to build outer skin and form chimney shaft to specifications and are constructed in accordance with specifications and standards.</p> <p>6.5. Baffles are built in, where designed, to location and specifications.</p>
7. Complete chimney.	<p>7.1. Chimney tray is built in to chimney design and installed to specification in accordance with standards.</p> <p>7.2. Chimney is constructed in accordance with specifications and standards.</p> <p>7.3. Head of chimney is completed to designed finish in accordance with drawings and specifications.</p>
8. Finish joints.	<p>8.1. Joints to laid brickwork, blockwork and stonework are raked or ruled to designed depth in accordance with the job specifications.</p> <p>8.2. Joints to laid brickwork, blockwork and stonework are raked out for provision of apron and stepped flashing at roof line.</p> <p>8.3. Brickwork, blockwork and stonework are brushed down prior to drying, using appropriate brushing tool.</p>
9. Clean up.	<p>9.1. Work area is cleared and materials disposed of, reused or recycled in accordance with legislation,</p>

ELEMENT**PERFORMANCE CRITERIA**

regulations, codes of practice and job specification.

9.2. Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills for this unit are:

- communication skills to:
 - determine requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - follow instructions
 - read and interpret:
 - documentation from a variety of sources
 - plans, specifications and drawings
 - report faults
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- numeracy skills to apply measurements and make calculations
- organisational skills, including the ability to plan and set out work
- teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities
- technological skills to:
 - use a range of mobile technology, such as two-way radio and mobile phones
 - voice and hand signals to access and understand site-specific instructions.

Required knowledge

Required knowledge for this unit is:

- brick expansion and growth, control and articulation joints
- characteristics and applications of materials for constructing fireplaces and

REQUIRED SKILLS AND KNOWLEDGE

chimneys

- construction terminology
- flashing
- job safety analysis (JSA) and safe work method statements
- material safety data sheets (MSDS)
- materials storage and environmentally friendly waste management
- plans, specifications and drawings
- principles of heat, fire and drawing of smoke
- processes for the calculation of material requirements
- quality requirements
- techniques for constructing fireplaces and chimneys
- types, characteristics, uses and limitations of plant, tools and equipment
- workplace and equipment safety requirements.

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, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities, responsibilities and procedures.

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 the ability to:

- locate, interpret and apply relevant information, standards and specifications
- comply with site safety plan and OHS legislation, regulations and codes of practice applicable to workplace operations
- comply with organisational policies and procedures, including quality requirements
- safely and effectively use tools, plant and equipment

EVIDENCE GUIDE

Context of and specific resources for assessment

- communicate and work effectively and safely with others
- as a minimum, given the plans and specifications, calculate the materials required and construct a brick fireplace and chimney, ensuring:
 - correct identification of requirement and finishing of the tasks
 - correct selection and use of appropriate processes, tools and equipment
 - completing all work to specification.

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the mandatory task requirements
- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry related systems information.

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.

Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of

EVIDENCE GUIDE

the Construction, Plumbing and 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.

Validity and sufficiency of evidence requires 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 on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

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.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

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, 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.

Information includes:

- diagrams or sketches
- instructions issued by authorised organisational or external personnel
- manufacturer specifications and instructions where specified
- memos
- MSDS
- organisation work specifications and requirements
- plans and specifications
- regulatory and legislative requirements pertaining to constructing fireplaces and chimneys
- relevant Australian standards
- safe work procedures related to constructing fireplaces and chimneys
- signage
- verbal or written and graphical instructions
- work bulletins
- work schedules.

Bricklaying and blocklaying tasks:

- include all clay brick (wire cut/pressed) and concrete block (hollow and solid) masonry work
- may be performed on a new construction site, an existing structure being renovated or extended or an existing structure subject to service restoration or maintenance.

Safety (OHS) is to be in accordance with legislation, regulations, codes of practice, organisational safety policies and procedures, and project safety plan and may include:

- emergency procedures, including emergency shutdown and stopping, extinguishing fires, organisational first aid requirements and evacuation
- handling of materials
- hazard control
- hazardous materials and substances

RANGE STATEMENT

- safe operating procedures, including the conduct of 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
 - underground services, including water, gas, electricity and communications
 - work site visitors and the public
 - working at heights
 - working in confined spaces
 - working in proximity to others
 - working with dangerous materials
- organisational first aid
- personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
- use of firefighting equipment
- use of tools and equipment
- workplace environment and safety.
- include:
 - bolsters
 - brick grabs
 - brooms
 - buckets
 - builders' lines
 - cement mixers
 - elevators
 - hammers (brickies, club and scutch)
 - hoses
 - jig saws
 - line blocks
 - line pins
 - masonry saws

Tools and equipment:

RANGE STATEMENT

- measuring tapes and rules
- mortar boards
- margin or raking tools
- profiles
- shovels
- spirit levels
- straight edges
- trowels
- wheelbarrows
- may include:
 - elevators
 - scaffolds
 - materials hoists
 - forklifts
 - pallet trolleys
 - brick buggies
 - small petrol or diesel engines or compressors.

Quality requirements include relevant regulations, including:

- Australian standards
- internal company quality policy and standards
- manufacturer specifications
- where specified
- workplace operations and procedures.

Materials:

- are to include:
 - aggregates
 - cement
 - clay bricks (wire cut or pressed)
 - fire-rated masonry blocks
 - lime
 - refractory bricks
- may be stone.

Environmental requirements include:

- clean-up protection
- noise and dust
- vibration
- waste management.

Statutory and regulatory authorities include:

- federal, state and local authorities administering applicable Acts, regulations and codes of practice.

RANGE STATEMENT

Fireplaces and chimneys include:

- brick and block veneer
- solid brick, block and stone wall structured buildings.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area