



Australian Government

CPCCRT3004B Repair and renovate tile roofs

Release 1

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Modification History

Photovoltaic (solar) panels added to range statement
Equivalent to CPCCR3004A

Unit Descriptor

This unit of competency specifies the outcomes required to repair and renovate roof tiles to different roof structures.
It includes the preparation for and replacement and fixing of tiles to the roof.

Application of the Unit

This unit supports the attainment of skills and knowledge to repair and renovate a range of different roof structures, which includes working with others and as a member of a team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

CPCCOHS2001A Apply OHS requirements, policies and procedures in the construction industry

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

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|---|--------------------|--|
| 1 | Plan and prepare. | 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained from relevant <i>information</i> , confirmed and applied to the <i>scope of work</i> performed. |
| | | 1.2 <i>Safety (OHS)</i> requirements are followed in accordance with safety plans and policies. |
| | | 1.3 Signage and barricade requirements are identified and implemented. |
| | | 1.4 Plant, <i>tools and equipment</i> selected to carry out tasks that are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement. |
| | | 1.5 <i>Materials</i> quantity requirements are calculated in accordance with plans, specifications and <i>quality requirements</i> . |
| | | 1.6 Materials appropriate to the work application are identified, obtained, prepared, safely handled and located ready for use. |
| | | 1.7 <i>Environmental requirements</i> are identified for the project in accordance with environmental plans and <i>statutory and legislative authority</i> obligations and applied. |
| 2 | Prepare roof area. | 2.1 Damaged area is identified and located in accordance with job drawings and specifications. |
| | | 2.2 Fall arrest system is installed in accordance with regulatory and workplace procedures. |
| | | 2.3 Roofing materials and building component parts are safely and effectively handled using appropriate material handling techniques. |
| | | 2.4 Damaged tiles are removed to ensure minimum disturbance to remaining roof tiles. |
| | | 2.5 Pointing or mortar to be replaced is removed ensuring no damage to roof tiles. |

- 2.6 Area to be repaired is left clean and free of loose waste.
 - 2.7 Roof battens, sarking, boarding and flashing installations are checked for soundness and adequacy and replaced in accordance with job specifications.
 - 3 Replace roof tiles.
 - 3.1 Roof tiles are individually examined to ensure conformity to original roof tiles.
 - 3.2 Mortar is mixed to required composition and job specifications.
 - 3.3 Roof tiles are laid to maintain conformity to gauge, level alignment and plumb, while maintaining bond to specifications.
 - 3.4 Roof tiles are laid to produce design features in accordance with original design and specifications.
 - 3.5 Mortar joints are struck to match existing colour and loose mortar is removed from roof tile surface.
 - 4 Replace pointing material.
 - 4.1 Pointing material is mixed to specifications.
 - 4.2 Pointing material is applied to ridge tile joints to specification.
 - 4.3 Joints are pointed to produce matching finish to existing surrounds and loose material is removed from roof tile surface.
 - 5 Clean up.
 - 5.1 Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations, codes of practice and job specification.
 - 5.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices.

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
 - follow instructions
 - read and interpret:
 - documentation from a variety of sources
 - drawings and specifications
 - report faults
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- identifying and accurately reporting to appropriate personnel any faults in tools, equipment or materials
- numeracy skills to apply measurements and 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:

- characteristics and applications of roof tiling materials
- general construction terminology
- job safety analysis (JSA) and safe work method statements
- material safety data sheets (MSDS)
- materials storage and environmentally friendly waste management
- plans, drawings and specifications
- plant, tools and equipment types, characteristics, uses and limitations
- processes for the calculation of material requirements
- quality requirements
- roof construction systems and structures and tiling considerations

- roof tiling techniques and procedures and the process of repairing/renovating tiled roofs
- workplace and equipment safety requirements.

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 of 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
- communicate and work effectively and safely with others
- as a minimum, replace approximately 1 square metre of damaged tiles in 5 square metre of a roof frame, including appropriate tile cutting, bedding and pointing, ensuring:
 - correct identification of requirement and installation and finishing of replacement tiles
 - correct selection and use of appropriate processes, tools and equipment
 - completing all work to specification.

Context of and specific resources for assessment

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 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

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
- MSDS
- memos
- regulatory and legislative requirements pertaining to repair and restoration of a tiled roof
- relevant Australian standards
- safe work procedures relating to repair and restoration of a tiled roof
- signage

- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

Scope of work:

- includes replacing damaged roof tiles, including the preparation of the area, and the matching, installation and pointing of the replacement tiles
- specifications include tile colour, tile profile, type of bond, nailing sequence and wind category
- tiles may be interlocking or non-interlocking
- types of terracotta tiles include Marseille, modern French, Swiss, Spanish and French
- types of concrete tiles include Elebane, Villa, Centurian, Chateau and shingle (concrete)
- pointing material may be flexible pointing material or its equivalent.

Safety (OHS) is to be in accordance with state and territory legislation and regulations and project safety plan and may include:

- emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation
- handling activities that may require the assistance of others or the use of manual or mechanical lifting devices where size, weight or other issues, such as a disability are a factor
- hazard control
- hazardous materials and substances, including cement and curing agents
- 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:
 - earth leakage boxes
 - lighting
 - photovoltaic (solar) panels
 - power cables, including overhead service trays, cables and conduits
 - restricted access barriers
 - surrounding structures
 - traffic control
 - trip hazards
 - working at heights
 - work site visitors and the public

- working in proximity to others
- working safely on roofs
- use of firefighting equipment
- use of tools and equipment
- workplace environmental requirements and safety.

Tools and equipment:

- include:
 - air compressors and hoses
 - bedding frames
 - blowers
 - brooms
 - buckets
 - calculators
 - chalk lines
 - chisels
 - concrete mixers
 - elevators
 - fall safety devices
 - gutter protectors
 - hammers
 - hand saws
 - high pressure water cleaners
 - ladders
 - measuring tapes and rules
 - nail bags
 - nail guns
 - pincers
 - power drills
 - power leads
 - power saws
 - shovels
 - squares
 - string lines
 - tile cutters
 - trowels
- may include:
 - scaffolds
 - small compressors
 - small petrol or diesel engines.

Materials include:

- adhesives
- concrete and terracotta tiles
- fastenings and other mechanical fixings
- flashings
- mortar
- sarking materials
- timber and metal battens.

Quality requirements include relevant regulations, including:

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

Environmental requirements include:

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

Statutory and regulatory authorities include:

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

Unit Sector(s)

Functional area

Unit sector Construction

Custom Content Section

Not applicable.