



Australian Government

CPCCCA3005B Construct ceiling frames

Release 1

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Modification History

Photovoltaic (solar) panels added to range statement
Equivalent to CPCCCA3005A

Unit Descriptor

This unit of competency specifies the outcomes required to plan, prepare, set out, construct and erect ceiling frames to accommodate ceiling joists, hanging beams, strutting beams and composite beams. It includes selection of members and setting out of the ceiling frame in conjunction with the roof members.

Application of the Unit

This unit of competency supports achievement of skills to determine materials and process, and then construct a range of ceiling frames used in the construction industry, 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
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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 for <i>planning</i> the work and confirmed and applied from relevant <i>information</i> . |
| | | 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 are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement. |
| | | 1.5 | Material quantity and <i>quality requirements</i> are calculated in accordance with plans and specifications. |
| | | 1.6 | <i>Materials</i> appropriate to <i>construction of ceiling frames</i> , including fire resistance ratings 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 regulatory authority</i> obligations, and are applied. |
| | | 1.8 | Passive and active fire control elements for ceiling frame construction and installation are identified and applied. |

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|---|------------------------|-----|--|
| 2 | Locate ceiling joists. | 2.1 | <i>Ceiling frame components</i> are identified and selected in accordance with regulatory criteria. |
| | | 2.2 | Location of ceiling joists are set out on the top plate to specifications for spacings of roof and ceiling members. |
| | | 2.3 | Ceiling joists and trimmers are cut to length, placed and securely fixed to locations in accordance with specifications. |
| 3 | Install hanging beams. | 3.1 | Hanging beam sizes and spacings are checked in accordance with regulatory criteria. |
| | | 3.2 | <i>Hanging beams</i> are installed. |
| | | 3.3 | Hanging beams on external walls are placed alongside rafter locations where specified. |
| | | 3.4 | Ceiling joists are connected using appropriate <i>connecting methods</i> to hanging beams. |
| 4 | Clean up. | 4.1 | Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations, codes of practice and job specification. |
| | | 4.2 | 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
 - 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:

- ceiling frame construction techniques
- ceiling framing materials, including steel and their rated fire resistance
- wall framing and roof construction, ceiling lining materials, including fire control and separation required by the National Construction Code (NCC) and other legislation
- construction terminology
- 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
- plant, tools and equipment types, characteristics, uses and limitation

- processes for the calculation of material requirements
- quality requirements for ceiling frames
- roofing set out
- timber types, structural properties and uses, including engineered timber products
- 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 relevant information, standards and specifications
- comply with site safety plan, OHS regulations and state and territory legislation 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
- set out, construct and erect a ceiling incorporating a hanging beam, ceiling trimmers and strutting beam to specifications for a full size one bedroom home or equivalent (includes a bedroom, lounge, kitchen and bathroom not less than 30 square metres)
- complete construction tasks involving both timber and metal materials and components
- ensure correct selection and use of fire-rated

materials and methods of construction.

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.

Planning includes:

- work site inspection
- equipment defect identification
- assessment of conditions and hazards
- determination of work requirements.

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 ceiling frames
- relevant Australian standards
- safe work procedures related to constructing ceiling frames
- signage
- verbal or written and graphical instructions
- work bulletins
- work schedules.

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

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

Tools and equipment include:

- air compressors and hoses
- chisels
- hammers
- hand saws
- marking equipment
- measuring tapes and rules
- nail bags
- nail guns
- power drills
- power leads
- power saws
- roofing square
- saw stools
- scaffolding
- spirit levels
- squares (combination/tri)
- string lines.

Quality requirements include relevant regulations, including:

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

Materials include:

- bolts
- metal
- nails
- patented fasteners
- reconstituted timber products
- screws
- synthetic materials
- timber.

Construction of ceiling frames:

- is to be completed in conjunction with the roof members

- methods include ensuring compliance with incipient spread of fire requirements
- selection of hangers and composite beams will be determined by the building geometry and roof pitch.

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.

Ceiling frame components include:

- synthetic materials
- timber and metal components.

Hanging beams include:

- ceiling frame bracing, which may be included where high wind loadings are specified
- hanging beams with end bearing, which are to be positioned so that full load distribution to the supporting wall frame is achieved
- installation, which may be incorporated with strutting and/or composite beams.

Connecting methods include:

- metal straps
- patented connectors
- timber cleats.

Unit Sector(s)

Functional area

Unit sector

Construction

Custom Content Section

Not applicable.