



Australian Government

Department of Education, Employment and Workplace Relations

CPCCSV5012A Assess timber-framed designs for one and two storey buildings

Release: 1

CPCCSV5012A Assess timber-framed designs for one and two storey buildings

Modification History

Not Applicable

Unit Descriptor

Unit descriptor This unit of competency specifies the outcomes required to select structural members for a timber-framed domestic building up to and including two storeys. It includes the evaluation of plans and specifications, and selection of structural members for ceiling and roof framing, timber wall frames, timber stumps, floor bearers and joists. It requires compliance with all relevant legislation, the Building Code of Australia (BCA) and Australian standards.

Application of the Unit

Application of the unit This unit of competency supports the attainment of the understanding and skills to assess timber-framed designs for one and two storey buildings, assess timber-framed designs, select structural members and identify and rectify faults within the context of relevant legislation, the BCA and Australian standards.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units Nil

Employability Skills Information

Employability skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the 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

ELEMENT	PERFORMANCE CRITERIA
1. Assess plans and specifications for size, span and spacing of structural members required in ceiling and roof framing.	1.1. Access is obtained to relevant plans, specifications and documentation related to <i>structural members required in ceiling and roof framing</i> for required <i>building categories</i>. 1.2. Specified timber species and stress grading are identified. 1.3. True length of common rafter and overhand and economical size of common rafter are determined to support specified roof structure and covering. 1.4. Maximum span of common rafter is determined. 1.5. Position, location and direction of struts and strutting beams to support roof and ceiling loads are determined and documented. 1.6. Method of support at hip and valley rafters is determined and documented. 1.7. Location, direction and span of ceiling joists and hanging beams to support specified roof design are determined and documented. 1.8. Nominated member sizes, spans, spacings and locations are listed, documented and checked for accuracy against plans and specifications.
2. Assess plans and specifications for permanent wind bracing requirements for nominated design gust wind speeds.	2.1. Access is obtained to relevant plans, specifications and documentation for <i>assessment of timber-framed designs</i>. 2.2. Location and category of building site is identified against design gust wind speed calculations. 2.3. Wind directions are selected and noted on plans. 2.4. Type and number of bracing units for each wind direction are selected. 2.5. Bracing details and description are documented, based upon calculations.
3. Assess plans and specifications for size, span and spacings of structural members for timber wall frames.	3.1. Access is obtained to relevant plans, specifications and documentation. 3.2. Specified timber species and stress grading are identified. 3.3. Roof load width for walls supporting ceiling and roof structures for a specified roof covering is determined. 3.4. Economical size for common wall studs is determined. 3.5. Size of top and bottom wall plates is determined according to load bearing conditions. 3.6. Size of studs at side window and door opening is determined.

ELEMENT**PERFORMANCE CRITERIA**

- 3.7. Size of lintels to nominated openings is determined.
- 3.8. Size of timber posts and beams supporting overhands is determined.
- 3.9. Nominated member sizes, spans, spacings and locations are identified, listed, documented and checked against plans and specifications for accuracy.

ELEMENT	PERFORMANCE CRITERIA
4. Assess plans and specifications for size, span and spacing of structural members for timber stumps, floor bearers and joists.	4.1. Access is obtained to relevant plans, specifications and documentation. 4.2. Specified timber species and stress grading are identified. 4.3. Economical size for floor bearer and joist to suit maximum spans and spacings is determined. 4.4. Size of timber stumps and footing type and size required to support structural members are determined. 4.5. Size for timber trimmers, working and trimming joists for stair opening to suit maximum spans and spacings is determined. 4.6. Location, direction and span of bearers and joists to support specified structure are determined. 4.7. Nominated member sizes, spans, spacings, direction and bracings are identified, listed, documented and checked for accuracy against plans and specifications.

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:

- ability to respond to change and contribute to workplace responsibilities, such as current work site environmental and sustainability frameworks or management systems
- communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - read and interpret:
 - plans and specifications
 - other relevant documentation
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication
 - written skills to record mathematical information
- numeracy skills to apply measurements and calculations

REQUIRED SKILLS AND KNOWLEDGE

- planning and organisational skills to collect, organise and analyse information
- technological skills to:
 - complete documentation and calculations
 - enable information gathering and analysis.

Required knowledge

Required knowledge for this unit is:

- authorities and powers of a building surveyor
- behaviour of structural members undergoing stress, strain, compression, bending or combined actions
- grading processes and grade markings used to categorise timber and timber products
- manufactured timber framing systems
- nature of timber and effect of physiology and timber pests on its performance
- processes for the administration and preparation of documentation
- processes for the application of wind force, raking forces, and bracing and tie down systems
- processes for the interpretation of reports, working drawings and specifications
- relevant federal, state or territory legislation and local government policy and procedures
- research methods
- structural, design and construction principles of buildings, including the application of timber in buildings.

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:

- comply with OHS regulations applicable to workplace operations
- apply organisational management policies and procedures, including quality assurance requirements where appropriate
- assess timber-framed designs, evaluate plans and specifications, and identify faults; select structural members for roofs, ceilings, walls, floors and stumps relating to performance and the associated reporting of data, findings, recommendations and rectification strategies for at least one building project of up to two storeys or equivalent in compliance with relevant legislation
- provide reports to appropriate body/individual as determined by the project brief.

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

EVIDENCE GUIDE

- 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.

EVIDENCE GUIDE

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.

Guidance information for

This unit could be assessed on its own or in combination with other units relevant to the job

EVIDENCE GUIDE

assessment

function, for example:

- CPCCSV5001A Assess the construction of domestic scale buildings
- CPCCSV5006A Assess construction faults in residential buildings.

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.

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.

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.

Structural members required in ceiling and roof framing:

- includes evaluation and identification of structural members used in:
 - ceiling and roof framing
 - floor bearer and joist installing
 - timber stumping
 - timber wall framing
- suitable for the building design in compliance with:
 - BCA
 - design specifications
 - legislative requirements
 - maintenance specifications
 - relevant legislation.

RANGE STATEMENT

Building categories include:

- all timber-framed domestic scale buildings up to and including two storeys.

Assessment of timber-framed designs:

- includes the identification and recording and reporting of faults, in accordance with workplace providers, in verbal or written format
- timber-framed designs include:
 - floor framing, such as loose set single storey timber structures and two storey suspended upper floor level construction
 - overhang framing with soffits and eaves, attached carport, attached veranda and attached patio
 - roof framing, such as skillion, gable, hip and valley and cathedral
 - wall framing of various sizes, bracing locations and tie downs.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area