



Australian Government

Department of Education, Employment and Workplace Relations

BCGSV5012A Assess timber framed designs for one and two storey buildings

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit specifies the competency required to select structural members for a timber framed domestic building up to and including two (2) storeys.

It includes the evaluation of plans and specifications, 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, Australian Standards and the Building Code of Australia.

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Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

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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 all relevant plans, specifications and documentation 1.2 Specified timber species and stress grading is identified 1.3 True length of common rafter and overhand and economical size of common rafter is 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 is 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 all relevant plans, specifications and documentation 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 is selected 2.5 Bracing details and description is documented based upon calculations

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| 3 | Assess plans and specifications for size, span and spacings of structural members for timber wall frames/s | 3.1 Access is obtained to all relevant plans, specifications and documentation |
| | | 3.2 Specified timber species and stress grading is 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 |
| | | 3.7 Size of lintels to nominated openings is determined |
| | | 3.8 Size of timber posts and beams supporting over hands is determined |
| | | 3.9 Nominated member sizes, spans, spacings and locations are identified, listed, documented and checked against plans and specifications for accuracy |
| 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 all relevant plans, specifications and documentation |
| | | 4.2 Specified timber species and stress grading is 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 is 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 is 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

Not applicable.

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 and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

Compliance with occupational health and safety regulations applicable to workplace operations.

Application of organisational management policies and procedures including quality assurance requirements where appropriate.

Assessment of timber framed designs, evaluation of plans and specifications and identification of faults. The selection of 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 (1) building project of up to two (2) storeys or equivalent in compliance with relevant legislation.

Provision of reports to appropriate body/individual as determined by the project brief.

Application of strategic plans, workplace policies and procedures.

Are there any other units which should be assessed with this unit or which relate directly to this unit?

This unit should be co-assessed with BCG5006, BCG5001 and BCG5039.

Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

Processes for the interpretation of reports, working drawings and specifications.

Nature of timber and effect that physiology and pests have on timber, which affect its performance.

Grading processes and grade markings used to categorise timber and timber products.

Behaviour of structural members undergoing stress, strain, compression, bending or combined actions.

Authorities and powers of a building surveyor.

Relevant national, State/Territory legislation and local government policy and procedures.

Structural, design and construction principles of buildings including the application of timber in buildings.

Processes for the application of wind force, raking forces, bracing and tie down systems.

Manufactured timber framing systems.

Terminology, definitions and hazard identification.

Codes of conduct and ethics.

Research methods.

Processes for the administration and preparation of documentation.

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, analyse, organise and understand the process for assessing timber-framed designs on buildings up to two (2) storeys plus subsequent reporting procedures. **Level 2**

Communicate ideas and information

Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of timber framed design assessment and faults on buildings up to two (2) storeys. **Level 2**

Plan and organise activities

Plan and organise activities including the planning of analytical processes, the evaluation of plans and specifications in the assessment of timber frame designed buildings of up to two (2) storeys. **Level 2**

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. **Level 1**

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. **Level 3**

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. **Level 2**

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. **Level 2**

In what context should assessment occur?

Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide and within the scope defined by the Range Statement.

Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.

Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

A situation, real or realistically simulated, requiring assessment of timber framed designs for one and two storey buildings.

The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

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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

Assessment of timber framed designs is to include but not be limited to the evaluation and identification of structural members, used in ceiling and roof framing, timber wall framing, timber stumping, floor bearer and joist installing, and be suitable for the building design in compliance with relevant legislation, design specifications, maintenance specifications and adherence to legislative requirements for the Building Code of Australia.

Building categories may include but not be limited to all timber framed domestic scale buildings up to and including two (2) storeys.

Timber frame designed building projects requiring structural member assessment are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.

Assessment of timber-framed designs is to include the identification and recording/reporting of faults, in accordance with workplace providers, in verbal or written format.

Timber framed designs may include but not be limited to:

Roof framing:

skillion, gable, hip and valley and cathedral.

Floor framing:

loose set single storey timber structures, two storey suspended upper floor level construction.

Wall framing:

sizes, bracing locations and tie downs.

Overhang framing:

Soffits and eaves, attached carport, attached veranda, and attached patio.

Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

Competency requires the demonstration of research, analysis, evaluation and reporting skills in the assessment of timber framed designs, selection of structural members, the identification and rectification of faults. Competency must be demonstrated within the context of relevant legislation, the Building Code of Australia and Australian Standards.

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Unit Sector(s)

Not applicable.