



Australian Government

FWPCOT4202 Design timber structures

Release: 2

FWPCOT4202 Design timber structures

Modification History

Release	Comments
Release 2	This version released with FWP Forest and Wood Products Training Package Version 3.0.
Release 1	This version released with FWP Forest and Wood Products Training Package Version 2.0.

Application

This unit of competency describes the outcomes required to interpret plans, select options and detail designs of timber structures including roof truss, wall frame and floor components for solid brick, brick veneer and timber frame domestic houses and free-standing or attached timber structures such as pergolas. Work is completed in a timber and wood products production setting and includes providing production advice and explanation of designs.

The unit applies to Designer, Customer Service / Sales Assistant (Retail or Wholesale), Customer Service Officer, Sales and Merchandising Team Leader, Sales and Merchandising Team Leader (Timber Products), Timber Advisor.

No licensing, legislative, regulatory, or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Common Technical

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.</i>
1. Interpret plans and	1.1 Interpret and assess plans, drawing views and notes; identify

ELEMENTS	PERFORMANCE CRITERIA
loading conditions	loading information, design requirements and restrictions. 1.2 Obtain additional information and data from appropriate personnel or sources. 1.3 Create functional and pictorial image of structure, trusses or frames based on design requirements.
2. Develop and select truss, frame or floor component layout options	2.1 Transfer fixed design details to component layout drawings. 2.2 Nominate engineered or pre-assembled components in line with budgetary constraints. 2.3 Define design sizes and spacing details in line with industry standards. 2.4 Select layouts and spacing of individual structural members progressively to meet design requirements. 2.5 Fix component sizes to clarify and firm design options.
3. Detail truss, frame or floor component design	3.1 Calculate, scale or extract physical dimensions for components from applicable code tables. 3.2 Interpret effective lengths and spans for individual components from layout, and select cross-sections in line with applicable codes. 3.3 Select material options for suitability, availability, cost effectiveness and use consistently throughout design. 3.4 Detail component placement and spacing to site and customer standards. 3.5 Provide design specifications for engineered or pre-assembled components in line with manufacturer's recommendations. 3.6 Present detailed and accurate production information, dimensions and notes within drawing views. 3.7 Complete and maintain design records and documentation in line with organisational procedures.
4. Provide design and production advice	4.1 Answer questions about designs and assembly requirements clearly and comprehensively. 4.2 Use effective communication techniques to assist and develop production personnel. 4.3 Provide alternative materials and sizes for components within scope of design and production requirements.

Foundation Skills

This section describes those core and employment skills that are essential to performance and are not explicit in the performance criteria.

Numeracy skills to:	- interpret numerical data from designs involving height, length, angles, shape and load - input complex numerical data into designs for layout, spacing and dimensions of structural members.
Oral communication skills to:	- ask detailed open and closed probe questions and actively listen to clarify contents of designs, plans, drawings and notes - provide clear unambiguous information about designs and assembly requirements - negotiate solutions to site installation problems.
Reading skills to:	interpret detailed and unfamiliar designs and technical notes.
Writing skills to:	produce clear and detailed documents to support interpretation of drawings and assist with production and installation.
Planning and organising skills to:	plan and organise own work in logical sequence and manage own timing and productivity to complete plans, drawings and documents within deadlines.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPCOT4202 Design timber structures Release 2	FWPCOT4202 Design timber structures Release 1	Minor typographical errors corrected	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>

Assessment Requirements for FWPCOT4202 Design timber structures

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Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. If a specific volume or frequency is not stated below, then evidence must be provided that the following requirements have been performed on at least one occasion:

- prepare and document designs for timber structures in line with an individual design and set of drawing views and notes
- interpret drawings and loading conditions
- interpret and apply technical information and conveying information in written, sketch and oral form
- apply mathematical procedures
- develop and select truss, frame or floor layout options
- provide design and production advice.

Knowledge Evidence

A person competent in this unit must be able to demonstrate knowledge of:

- applicable building and structural regulations for standard timber wall frames, roof and floor trusses, including:
 - AS1684 and supplementary tables
 - CSIRO supplementary tables
 - the Building Code of Australia
 - other regulations relevant to this task
 - nail plate provider standards
- loading information including:
 - details defining mass loads and externally applied loads (wind, surrounding structures, common/special building usage)

- dimensions defining geometry and loading of individual structural members
- common industry terminology for all components of timber wall frames, roof and floor trusses
- common industry standard layouts, spacing and sizing dimensions of individual members for timber wall frames, roof and floor structures
- relationship between component loads and supports and spans
- range of timber species and types that are suitable for the manufacture of timber wall frames, roof and floor trusses
- methods used to produce structural layout drawings and assembly drawings
- industry and specific organisational:
 - processes for producing designs for timber roof, wall and floor structures
 - formats for and inclusions of drawings and notes
- organisational procedures for preparing and documenting preparing and documenting designs for timber wall frames, roof and floor trusses.

Assessment Conditions

The following resources must be made available:

- computers, keyboards and industry current software programs used to produce documents
- scientific calculators
- code tables
- designs, plans, drawing views and notes for timber roof, wall and floor structures on which to base designs
- organisational procedures for preparing and documenting designs for timber roof, wall and floor structures.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessor requirements

Assessors must:

- hold the appropriate assessor competency standards as outlined in regulations; and
- be able to demonstrate vocational competencies at least to the level being assessed; and
- be able to demonstrate how they are continuing to develop their VET knowledge and skills as well as maintaining their industry currency and assessor competence.

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