



Australian Government

FWPTMM4209 Interpret details of timber roof trusses to inform design of plans and production documents

Release: 1

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Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 6.0.

Application

This unit of competency describes the skills and knowledge required to interpret and apply a broad range of information into the design of timber roof trusses. It includes applying detailed information for the preparation of timber roof truss drawings, production documents and installation instructions using custom software for timber systems design.

The unit applies to timber systems designers and fabricators who use their own judgment to deal with predictable and unpredictable problems and decide on solutions to a range of complex problems during the documentation preparation process.

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

Pre-requisite Unit

Nil

Unit Sector

Timber Manufacturing Products (TMM)

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.</i>
1. Prepare for design of layout plans	1.1 Read and interpret building plans and specifications to determine and verify applied loads and other design factors 1.2 Interpret and apply relevant building codes, regulations and standards for timber roof truss design 1.3 Confirm workplace quality requirements for the design of timber

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	roof trusses 1.4 Consult with stakeholders/clients to clarify design requirements 1.5 Identify and resolve design, production and/or installation issues outside software limitations, and seek appropriate advice 1.6 Check custom computer software for currency
2. Create and review design options	2.1 Design and draft a timber roof truss layout plan 2.2 Review design to confirm it meets client requirements and complies with appropriate building regulations, codes and standards 2.3 Review layout to confirm it optimises efficiency of material use and production procedures 2.4 Amend design options if necessary
3. Design production and installation documentation	3.1 Confirm dimensions, span measurements and timber roof truss layout from building plans and specifications 3.2 Input applied spans, loads and data into software and create a timber roof truss layout 3.3 Prepare production and client installation documentation according to workplace quality requirements 3.4 Certify timber roof truss design complies with relevant building regulations, codes and practices, according to regulatory and workplace requirements 3.5 Store drawings and documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Select and extract information from a range of documents and diagrammatic texts
Writing	Apply interrelationships between written and diagrammatic forms to produce installation documentation

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPTMM4209 Interpret details of timber roof trusses to inform design of plans and production documents	FWPTMM4205 Prepare and advise on a broad range of timber roof truss details using computers	Redesigned unit that includes content from FWPTMM4205 Prepare and advise on a broad range of timber roof truss details using computers FWPTMM3204 Interpret designs to prepare timber roof truss drawings and documents using computers	Not Equivalent
FWPTMM4209 Interpret details of timber roof trusses to inform design of plans and production documents	FWPTMM3204 Interpret designs to prepare timber roof truss drawings and documents using computers	Redesigned unit that includes content from FWPTMM4205 Prepare and advise on a broad range of timber roof truss details using computers FWPTMM3204 Interpret designs to prepare timber roof truss drawings and documents using computers	Not Equivalent

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47>

Assessment Requirements for FWPTMM4209 Interpret details of timber roof trusses to inform design of plans and production documents

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has designed layout plans and developed production and installation documentation using timber systems design software for each of the following:

- a hip and valley roof with a minimum area of 100 square metres that includes a dutch gable and a gable end
- a complex hip end
- a sloping ridge.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- building industry regulations, codes and standards relevant to design of timber roof trusses:
 - National Construction Code (NCC)
- risks of non-conforming design
 - responsibilities and limits of authority with regard to certifying and non-conforming design
- types of roofs:
 - bell
 - bowstring
 - dual pitch
 - gabled
 - hipped
 - mansard

- skillion
- types of timber roof trusses:
 - A type
 - truncated
 - girder
 - jack
 - rafter
 - gable
 - saddle
 - raking
- interaction between roof truss types
- factors that contribute to roof truss design:
 - climate zones
 - wind forces
 - timber grading
 - tie down requirements
 - roof lining materials
- key features of plans, drawings and specifications:
 - types and applications of plans and drawings
 - relating specified information with plan and drawing details
- appropriate software, including custom software for timber systems design to:
 - research information
 - communicate with internal and external stakeholders
 - input and amend design factors and other data
 - produce drawings, plans and documents
 - store and retrieve documents
- types, functions, capabilities and limitations of drawing software
- application, characteristics and limitations of materials and components used for roofing systems
- certifying timber roof truss design layouts.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a design or manufacturing workplace or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - computers and software, including timber systems design software
- specifications:

- access to workplace policies, procedures and processes relevant to designing timber roof trusses and providing design advice
- access to building regulations, codes and standards relevant to timber roof trusses
- access to workplace health and safety and environmental policies and procedures applicable to design of timber roof trusses.
- relationships:
 - clients/stakeholders to discuss and confirm timber roof truss design.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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