



Australian Government

FWPCOT6210 Develop engineered wood products to meet energy efficient building design needs

Release: 1

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Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 4.0.

Application

This unit of competency describes the skills and knowledge required to research and develop engineered wood products to meet the requirements of energy efficient design for residential buildings. It requires high-level understanding of residential building design, building codes and engineered timber design and practice.

The unit applies to individuals who work as designers (manufacturing and engineered wood products) and senior managers in a timber and wood products production environment. They generally demonstrate autonomy, judgement and defined responsibility in known or changing contexts and within broad but established parameters.

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.</i>

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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Explore commercial opportunities for engineered wood products	1.1 Review National Construction Code guidelines and standards relating to climate zones and energy efficiency measures 1.2 Research and evaluate existing information to inform new product development 1.3 Identify gaps in the current range of engineered wood products for new products or concepts 1.4 Complete a market analysis using appropriate information sources to determine design and production requirements 1.5 Develop preliminary product concept according to research findings 1.6 Consult relevant stakeholders on broad parameters for developing a product that meets the market need
2. Formulate design concept for products	2.1 Generate ideas for product style to complement design concepts and production requirements 2.2 Use appropriate documentation methods to produce preliminary representation or prototyping of product 2.3 Consult with stakeholders to review and critique design concepts according to production requirements 2.4 Review design concepts to ensure energy efficiency is proven to allow project progression 2.5 Develop a business case for realising design including a full cost-benefit analysis 2.6 Obtain required approvals to progress product development according to production requirements
3. Develop the product to an operational level	3.1 Develop and test product according to design concepts 3.2 Align product energy efficiency requirements to market analysis 3.3 Implement certification and compliance processes for engineered product and production system 3.4 Develop detailed implementation specifications and present to relevant stakeholders for approval and funding 3.5 Select and organise production resources according to design specifications 3.6 Design quality assurance system according to workplace procedures

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	3.7 Develop and document safe operating procedures for production processes

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	Interpret complex and sometimes unfamiliar information in building codes, guidelines and standards
Oral communication	- Hold high-level consultative discussions to present abstract ideas and generate feedback and ideas on design concepts - Influence and negotiate desired outcomes with stakeholders
Numeracy	- Interpret complex energy efficiency ratings in codes, and complete complex calculations for designs - Complete complex calculations for cost-benefit analysis
Navigate the world of work	Work independently and collectively within broad parameters, with a strong sense of responsibility and ownership of goals, plans, decisions and outcomes
Interact with others	Identify the perspectives of others as part of work role
Get the work done	Use analytical processes, establishing criteria for deciding between options and seeking input and advice from others before taking action when necessary

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPCOT6210 Develop engineered wood products to meet energy efficient building design needs	FWPCOT6203 Develop engineered timber products to meet energy efficient building design needs	Updated industry terminology, the range of products in performance evidence and foundation skills; clarified intent of the unit and assessment requirements; changed unit title and code for compliance and consistency with the updates.	Equivalent unit

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 FWPCOT6210 Develop engineered wood products to meet energy efficient building design needs

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Performance Evidence

An individual demonstrating competency in this unit must satisfy all of the elements and performance criteria of this unit. There must be evidence that the individual has:

- developed two designs for one or more of the following types of engineered wood products, from initial concepts through to operational level, to meet the requirements of energy efficiency performance for residential buildings:
 - laminated beams
 - laminated veneer lumber
 - plywood
 - chipboard
 - hardboard
 - medium density fibreboard
 - oriented strand board
 - laminated or engineered flooring
 - glued laminated timber (glulam)
 - cross-laminated timber (CLT).

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:

- purpose and key content of the following codes and standards:
 - National Construction Code guidelines and standards for climate zones and energy efficiency measures
 - AS/NZ Standards associated with engineered wood products and associated design and construction
 - forest certification and Chain of Custody standards
- key components of market analysis, including:
 - need

- placement
- financial certainty
- volume
- market issues relevant to engineered wood products and climate zones and applications
- theory underpinning development of R-values
- timber engineering design principles for energy efficient residential constructions
- characteristics of a range of timber species and associated wood-based products, their durability and serviceability
- key features of product development stages relevant to engineered wood products, including:
 - prototyping
 - testing
 - acquiring and commencing certification
 - gaining approval for infrastructure development
 - establishing production methods and procedures
- project management processes and tools for developing engineered wood products, including:
 - quality management systems
 - risk assessment systems
 - cost-benefit analysis tools
 - safe operating procedures for production processes
- purpose, format and common contents of business cases for realising designs, including:
 - capital cost
 - material
 - labour
 - design expenses
 - overheads
 - margin
 - running cost
 - lifecycle analysis
 - market uptake
 - discount and internal rate of return on investment
 - other opportunity cost analysis
- system functions and capabilities of house energy rating software and associated protocols for use.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:

- skills must be demonstrated in an environment that accurately reflects workplace conditions
- resources, equipment and materials:
 - computers, keyboards, printers and software used to document business case, design specifications and safe operating procedures
- specifications:
 - documents and proformas commonly used for developing business cases and operating procedures for production processes.

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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