



Australian Government

FWPCOT6203 Develop engineered timber products to meet energy efficient building design needs

Release: 1

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Modification History

Release	Comment
1	Replaces equivalent unit FPICOT6203A Develop engineered timber products to meet energy efficient building design needs, which was first released with FPI11 Forest and Forest Products Training Package Version 2.2.

Application

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

The unit applies to job roles including Designer (Manufacturing and Engineered Wood Products) and other senior managers in a timber and wood products production setting.

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. Explore commercial opportunities for engineered timber products	1.1 Review Building Codes of Australia (BCA) guidelines and standards relating to climate zones and energy efficiency measures.

ELEMENTS	PERFORMANCE CRITERIA
	1.2 Research and evaluate existing information to inform new product development. 1.3 Identify gaps in current range of engineered timber 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 in line with research findings. 1.6 Consult relevant stakeholders on broad parameters for developing product to meet 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. 2.4 Review design concepts to ensure energy efficiency is proven to allow project progression. 2.5 Develop business case for realising design including full cost benefit analysis. 2.6 Obtain required approvals to progress product development.
3. Develop the product to operational level	3.1 Develop and test product in line with 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 in line with design specifications. 3.6 Design quality assurance system in line with organisational procedures. 3.7 Develop and document safe operating procedures for production processes.

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 complex energy efficiency ratings in codes and complete complex calculations for designs. • Complete complex calculations for cost benefit analysis.
Oral communication skills to:	• Hold high-level consultative discussions to present abstract ideas and generate feedback and ideas on design concepts. • Influence and negotiate desired outcomes with stakeholders.
Reading skills to:	• Interpret complex and sometimes unfamiliar information in building codes, guidelines and standards.
Writing skills to:	• Develop comprehensive documents requiring complex language structures and precision of expression: • business case • quality assurance system • design specifications. • Document safe operating procedures requiring the presentation of precise complex information, using simple language structures for use by production personnel.

Unit Mapping Information

FPICOT6203A Develop engineered timber products to meet energy efficient building design needs

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 FWPCOT6203 Develop engineered timber products to meet energy efficient building design needs

Modification History

Release	Comment
1	Replaces equivalent unit FPICOT6203A Develop engineered timber products to meet energy efficient building design needs, which was first released with FPI11 Forest and Forest Products Training Package Version 2.2. Assessment requirements now specify the performance and knowledge evidence, as well as assessment conditions for this unit of competency. These sections simplify and replace components used in the previous unit format, including 'Required Skills and Knowledge, Evidence Guide and Range Statement'.

Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must be able to provide evidence that they can:

- Develop two designs for engineered timber products from initial concepts through to operational level; products are to be chosen from the following list:
 - laminated beams
 - laminated veneer lumber (LVL)
 - plywood
 - chipboard
 - hardboard
 - medium density fibre board (MDF)
 - oriented strand board (OSB)
 - laminated or engineered flooring.

Knowledge Evidence

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

- Purpose and key content of the following codes and standards :
 - Building Codes of Australia (BCA) 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 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 timber 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 timber products, including:
 - quality management systems
 - risk assessment systems
 - cost benefit analysis tools
- 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

The following resources must be made available:

- Computers, keyboards, printers and software used to document business case, design specifications and safe operating procedures.
- Documents and proformas commonly used for:
- business cases
- safe operating procedures for production processes.

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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