

**Modification history**

Release	Comments
Release 2	This version released with FWP Forest and Wood Products Training Package Version [4.0]  Version created to update range of products requirements in performance evidence.
Release 1	This version 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.

UNIT CODE	FWPCOT6203 Develop engineered timber products to meet energy efficient building design needs
<b>Application</b>	<p>This unit of competency describes the skills and knowledge 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.</p> <p>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. <u>They generally demonstrate autonomy, judgement and defined responsibility in known or changing contexts and within broad but established parameters.</u></p> <p>No licensing, legislative, regulatory, or certification requirements apply to this unit at the time of publication.</p>
<b>Prerequisite Unit</b>	Nil
<b>Unit Sector</b>	Common Technical

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. 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 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

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. 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	
<i>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.</i>	
Skill	Description
Numeracy	<ul style="list-style-type: none"> <li>interpret complex energy efficiency ratings in codes and complete complex calculations for designs</li> <li>complete complex calculations for cost benefit analysis</li> </ul>
Oral communication	<ul style="list-style-type: none"> <li>hold high-level consultative discussions to present abstract ideas and generate feedback and ideas on design concepts</li> <li>influence and negotiate desired outcomes with stakeholders</li> </ul>
Reading	<ul style="list-style-type: none"> <li>interpret complex and sometimes unfamiliar information in building codes, guidelines and standards</li> </ul>
Writing	<ul style="list-style-type: none"> <li>develop comprehensive documents requiring complex language structures and precision of expression:               <ul style="list-style-type: none"> <li>business case</li> <li>quality assurance system</li> <li>design specifications</li> </ul> </li> <li>document safe operating procedures requiring the presentation of precise complex information, using simple language structures for use by production personnel</li> </ul>

Unit Mapping Information			
Code and title current version	Code and title previous version	Comments	Equivalence status
FWPCOT6203 Develop engineered timber products to meet energy efficient building design needs	FWPCOT6203 Develop engineered timber products to meet energy efficient building design needs	Updated range of products requirements in performance evidence	Equivalent unit

Links	Companion volumes available from the ForestWorks website - <a href="https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47">https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47</a>
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<b>TITLE</b>	<b>Assessment requirements for FWPCOT6203 Develop engineered timber products to meet energy efficient building design needs</b>
<b>Performance Evidence</b>	
<p>An individual demonstrating competency must satisfy all of the elements, performance criteria and foundation skills of this unit. There must be evidence that the individual has:</p> <ul style="list-style-type: none"> <li>• developed two designs for engineered timber products from initial concepts through to operational level; products are to be chosen from the following list: <ul style="list-style-type: none"> <li>• laminated beams</li> <li>• laminated veneer lumber (LVL)</li> <li>• plywood</li> <li>• chipboard</li> <li>• hardboard</li> <li>• medium density fibre board (MDF)</li> <li>• oriented strand board (OSB)</li> <li>• laminated or engineered flooring</li> <li>• <u>cross laminated timber (CLT)</u>.</li> </ul> </li> </ul>	

<b>Knowledge Evidence</b>	
<p>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:</p> <ul style="list-style-type: none"> <li>• purpose and key content of the following codes and standards: <ul style="list-style-type: none"> <li>• Building Codes of Australia (BCA) guidelines and standards for climate zones and energy efficiency measures</li> <li>• AS/NZ Standards associated with engineered wood products and associated design and construction</li> <li>• forest certification and Chain of Custody standards</li> </ul> </li> <li>• key components of market analysis including: <ul style="list-style-type: none"> <li>• need</li> <li>• placement</li> <li>• financial certainty</li> <li>• volume</li> </ul> </li> <li>• market issues relevant to engineered wood products engineered wood products and climate zones and applications</li> <li>• theory underpinning development of R-values</li> <li>• timber engineering design principles for energy efficient residential constructions</li> <li>• characteristics of a range of timber species and associated wood based products, their durability and serviceability</li> <li>• key features of product development stages relevant to engineered timber products including: <ul style="list-style-type: none"> <li>• prototyping</li> <li>• testing</li> <li>• acquiring and commencing certification</li> <li>• gaining approval for infrastructure development</li> <li>• establishing production methods and procedures</li> </ul> </li> <li>• project management processes and tools for developing engineered timber products including: <ul style="list-style-type: none"> <li>• quality management systems</li> <li>• risk assessment systems</li> <li>• <u>cost benefit analysis tools</u></li> <li>• <u>safe operating procedures for production processes</u></li> </ul> </li> <li>• purpose, format and common contents of business cases for realising designs including: <ul style="list-style-type: none"> <li>• capital cost</li> <li>• material</li> <li>• labour</li> <li>• design expenses</li> <li>• overheads</li> <li>• margin</li> </ul> </li> </ul>	

<b>Knowledge Evidence</b>
<ul style="list-style-type: none"> <li>• running cost</li> <li>• lifecycle analysis</li> <li>• market uptake</li> <li>• discount and internal rate of return on investment</li> <li>• other opportunity cost analysis</li> <li>• system functions and capabilities of house energy rating software and associated protocols for use.</li> </ul>

<b>Assessment Conditions</b>
<p>Assessment of skills must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>• physical conditions:                             <ul style="list-style-type: none"> <li>• <del>skills must be demonstrated in an competency is to be</del> <del>environment that e-assessed in the workplace or a simulated environment that</del> accurately reflects <del>performance in a real workplace setting</del> <u>workplace conditions</u></li> </ul> </li> <li>• resources, equipment and materials:                             <ul style="list-style-type: none"> <li>• computers, keyboards, printers and software used to document business case, design specifications and safe operating procedures</li> </ul> </li> <li>• specifications:                             <ul style="list-style-type: none"> <li>• documents and proformas commonly used for business cases</li> <li>• safe operating procedures for production processes.</li> </ul> </li> </ul> <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>

<b>Links</b>	Companion volumes available from the ForestWorks website - <a href="https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47">https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47</a>
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