Modification history

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

| UNIT CODE | FWPCOT6XXX Develop engineered wood products to meet energy efficient building design needs |
| --- | --- |
| 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 knowledge 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. |
| Prerequisite Unit | Nil  |
| Unit Sector | Common Technical |

| Elements | Performance Criteria |
| --- | --- |
| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Explore commercial opportunities for engineered wood products | 1.1 Review National Construction Code (NCC) guidelines and standards relating to climate zones and energy efficiency measures 1.2 Research and evaluate existing information to inform new product development1.3 Identify gaps in current range of engineered wood products for new products or concepts1.4 Complete a market analysis using appropriate information sources to determine design and production requirements1.5 Develop preliminary product concept in line with research findings1.6 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 requirements2.2 Use appropriate documentation methods to produce preliminary representation or prototyping of product2.3 Consult with stakeholders to review and critique design concepts2.4 Review design concepts to ensure energy efficiency is proven to allow project progression2.5 Develop business case for realising design including full cost benefit analysis2.6 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 analysis3.3 Implement certification and compliance processes for engineered product and production system3.4 Develop detailed implementation specifications and present to relevant stakeholders for approval and funding3.5 Select and organise production resources in line with design specifications3.6 Design quality assurance system in line with workplace procedures 3.7 Develop and document safe operating procedures for production processes |

| Foundation SkillsThis 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 |
| FWPCOT6XXX 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, 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 available from the ForestWorks website - <https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47> |

| TITLE | Assessment requirements for FWPCOT6XXX Develop engineered wood products to meet energy efficient building design needs |
| --- | --- |
| Performance Evidence |
| 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:* developed two designs for engineered wood 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
* 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 (NCC) 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 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 | Companion volumes available from the ForestWorks website - <https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47> |