



Australian Government

FWPTMM3220 Develop knowledge of glue laminated timber or cross laminated timber production

Release: 1

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Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 8.0.

Application

This unit of competency describes the skills and knowledge required to develop a current understanding of the application and production processes of glue laminated timber (GLT) or cross laminated timber (CLT), identify gluing systems and curing procedures used in GLT or CLT production, and examine the testing and quality control procedures used in GLT or CLT production.

The unit applies to individuals who are engaged in a range of operational work roles in GLT or CLT production.

All work must be carried out to comply with workplace procedures, according to state/territory health and safety regulations, legislation and standards that apply to the workplace.

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

Pre-requisite Unit

Nil

Unit Sector

Timber Manufactured 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. Identify properties and uses of GLT or CLT	1.1 Identify properties and various applications of GLT or CLT in building and construction

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.2 Assess advantages and disadvantages of using GLT or CLT as a building and construction material
2. Identify GLT or CLT production process	2.1 Identify legislation, standards and codes of practice relevant to GLT or CLT production 2.2 Assess safety and environmental hazards associated with GLT or CLT production process 2.3 Determine workflow in GLT or CLT production process and assess factors that may impact on that workflow 2.4 Identify processes involved in the lamella production stage 2.5 Identify processes involved in forming or laying board layers stage 2.6 Determine equipment and processes used in the pressing stage 2.7 Determine steps in final processing stage, including calibrating and lengthwise or all sides cutting of laminated product
3. Identify glues and gluing systems used in GLT or CLT production	3.1 Identify types, properties and hazards associated with glues used in GLT or CLT production 3.2 Identify types and applications of gluing systems used in GLT or CLT production 3.3 Identify glue curing methods in GLT or CLT production
4. Assess testing and quality control procedures in GLT or CLT production	4.1 Identify factors that influence joint and bond quality in CLT or GLT production 4.2 Identify quality control check points in GLT or CLT production process 4.3 Identify types and causes of delamination and non-delamination defects in GLT or CLT production 4.4 Assess purpose and application of bond strength and durability tests in GLT or CLT production 4.5 Identify testing procedures and how test data is interpreted and used to determine appropriate follow-up actions

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 safety data sheets on glues used in GLT or CLT production - Recognise key information in technical documents related to GLT or CLT production

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPTMM3220 Develop knowledge of glue laminated timber or cross laminated timber production	Not applicable	The unit has been created to address a skill or task required by industry that is not covered by an existing unit	Newly created

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 FWPTMM3220 Develop knowledge of glue laminated timber or cross laminated timber production

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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 researched either glue laminated timber (GLT) or cross laminated timber (CLT) production and documented:

- legislation, standards and codes of practice relevant to GLT or CLT production
- two examples of GLT or CLT product appearance and structural grades for building and construction applications
- two examples of GLT or CLT product applications in the building and construction industry
- two advantages and two disadvantages of GLT or CLT building and construction material
- production workflow for either GLT or CLT, and two factors that may affect workflow performance
- one type of gluing system used in either GLT or CLT production
- properties and one potential hazard of two glue products used in either GLT or CLT production
- three timber characteristics required in the lamination process in GLT or CLT production to ensure joint and bond quality
- three examples of quality control check points in GLT or CLT production
- three factors that may affect lamination quality in GLT or CLT production.

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:

- key requirements of legislation, standards and codes of practice, including National Construction Code, relevant to GLT or CLT production
- properties of GLT or CLT, including:
 - appearance grades
 - structural grades

- advantages of using GLT or CLT in building and construction, including:
 - fire and seismic performance
 - insulation
 - strength to weight ratio
 - dimensional stability
 - sustainable material
 - prefabrication
 - durability
 - carbon reduction
- disadvantages of using GLT or CLT in building and construction, including:
 - cost
 - resistance to humidity
 - airtightness
- applications of GLT or CLT in building and construction, including:
 - GLT – beams, column, roof trusses
 - CLT – floors, walls, roofs, stairs
- characteristics of timber used in GLT or CLT production, including:
 - moisture content
 - visual appearance
 - structural properties
- stages involved in GLT or CLT production, including:
 - lamella production stage – pre-planing, timber grading, optimising – removal of defects, finger jointing lamellas, planing and cross-cutting
 - forming of layers and glue application stage
 - pressing stage
 - final processing stage – calibrating and cutting either lengthwise or framing
- factors impacting on workflow in GLT or CLT production, including:
 - availability of timber
 - operational, supervisory and management skills
 - access to and maintenance of GLT or CLT plant and equipment
- types, properties and hazards of glues used in GLT or CLT production, including:
 - polyurethane adhesives
 - phenol resorcinol formaldehyde adhesive
- types and applications of gluing systems
- quality control check points in GLT or CLT production process
- defects in GLT or CLT products, including:
 - delamination defects
 - non-delamination defects – stepping, incorrect finger-joint placements, incorrect lay-up
- factors that may affect lamination quality of GLT or CLT products, including:

- moisture content
- timber grade
- straight and square edges and faces
- consistent thickness
- surface finish
- glues and adhesives
- curing temperature
- pressing time
- post-cure time
- bond strength and durability tests used in GLT or CLT production process, including how to read test data and use results
- safety and environmental hazards associated with GLT or CLT production.

Assessment Conditions

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

- resources, equipment and materials:
 - reference materials on GLT or CLT production processes and glue and gluing systems used in GLT or CLT production processes
 - internet access and computer software and hardware for accessing technical information on GLT or CLT production
- specifications:
 - sections of National Construction Code relevant to GLT or CLT applications in building and construction.

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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