Modification history

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

FWPTMM3XXX	Develop knowledge of veneer preparation in plywood or laminated veneer lumber production
Application	This unit of competency describes the skills and knowledge required to recognise the processes involved in constructional veneer production for plywood or laminated veneer lumber (LVL) manufacture. The unit applies to individuals who are engaged in a range of operational roles in plywood and LVL production. No licensing, legislative or certification requirements apply to this unit at the time of publication.
Prerequisite Unit	Nil
Unit Sector	Timber Manufactured Products (TMM)

Elements	Performance Criteria
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Recognise the criteria for selecting peeler logs and the end uses of rotary peeled veneers	1.1 Identify the different categories of veneer products 1.2 Recognise the timber species and characteristics of peeler logs used in constructional veneer production 1.3 Recognise the criteria used to assign a value to peeler logs 1.4 Assess the advantages of veneer-based products compared to solid wood products 1.5 Identify uses of rotary peeled veneers
2. Research the constructional veneer production process	2.1 Identify the workflow in constructional veneer production 2.2 Investigate the processes involved in constructional veneer production 2.3 Identify quality checks conducted during constructional veneer production 2.4 Assess factors that impact on quality and workflow in constructional veneer production 2.5 Assess safety and environmental hazards associated with constructional veneer production
3. Investigate log preparation and conditioning processes used in constructional veneer manufacturing	3.1 Identify the impact of wood and log characteristics on veneer production 3.2 Recognise the adverse effects of log storage on veneer production and remedial actions than can be implemented. 3.3 Assess log characteristics that impact on debarking 3.4 Assess billet properties that impact on lathe yield 3.5 Identify causes of high roughness, short veneer and distortion in veneer that relate to billet properties 3.6 Document the log conditioning process and the advantages and disadvantages of log conditioning 3.7 Identify actions to prevent the adverse effects of log conditioning on veneer manufacture
4. Investigate the rotary peeling process in constructional veneer production	4.1 Identify the types, features, operating principles and safety requirements for lathes used in rotary peeling 4.2 Recognise the impact of nose bar set up and adjustment on veneer quality 4.3 Identify common problems in the rotary spinning process and appropriate corrective actions 4.4 Identify and explain the cause of veneer peeling defects 4.5 Assess the effects of wood properties on veneer quality

Elements	Performance Criteria
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
5. Research green veneer processing in constructional veneer production	5.1 Identify the characteristics of green veneer 5.2 Recognise factors that impact on clipper speed and clipped veneer quality 5.3 Investigate the stages in green veneer processing 5.4 Assess common problems in the scarfing process and appropriate corrective actions 5.5 Assess common composer quality problems and appropriate corrective actions
6. Research the constructional veneer drying process	6.1 Identify purpose of veneer drying 6.2 Investigate the stages in veneer drying 6.3 Assess moisture gradients and their impacts on veneer quality 6.4 Assess common defects resulting from veneer drying and methods to reduce or eliminate these defects 6.5 Assess common operational problems in veneer drying and appropriate corrective actions.
7. Assess constructional veneer grading processes	7.1 Identify reasons for grading veneer sheets 7.2 Research the grading criteria and grade classes for veneer in Australian Standards 7.3 Distinguish between visual grading and automatic grading 7.4 Assess common defects affecting veneer grade 7.5 Assess the operating principles of automatic veneer strength, moisture and appearance grading systems.

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	• Read familiar industry references materials on constructional veneer manufacture
Writing	• Write basic notes using familiar language and technical terms relevant to constructional veneer manufacture
Oral communication	• Use questioning skills to gather information related to constructional veneer manufacture
Numeracy	• Apply numeracy skills to read and interpret measurements displayed on moisture gradient meter

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPTMM3XXX Develop knowledge of veneer preparation in plywood or laminated veneer lumber production	FWPWPP3231 Produce veneer from prepared flitches	The unit has been redeveloped to address a skill or task required by industry that is not covered by an existing unit.	Not equivalent

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47

TITLE	**Assessment requirements for FWPTMM3XXX Develop knowledge of veneer preparation in plywood or laminated veneer lumber production**

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 veneer production in plywood or laminated veneer lumber (LVL) production and identified:

- two categories of veneer products
- the timber species and characteristics of peeler logs used in constructional veneer production
- two end applications of constructional veneer
- the workflow in constructional veneer production
- one factor that may impact on quality and workflow in constructional veneer production
- the stages involved in two of the following processes in constructional veneer preparation for plywood and LVL manufacture:
  - log preparation and conditioning processes
  - rotary peeling process
  - green veneer processing
  - veneer drying process
  - visual or automatic veneer grading processes
- one common problem and one relevant corrective action in one the following processes in constructional veneer preparation for LVL or plywood manufacture:
  - log preparation and conditioning processes
  - rotary peeling process
  - green veneer processing
  - veneer drying process
  - visual or automatic veneer grading processes.

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 in Australian Standards relevant to constructional veneer preparation in LVL or plywood production
- categories of veneer products:
  - constructional - veneers for plywood and LVL production
  - decorative - veneers for aesthetic surface appeal
- characteristics of peeler logs from suitable timber species selected for use in veneer production:
  - age
  - growth rate
  - stem form
  - size
  - straightness
  - nature and quantity of defects
- criteria used to assign a value to peeler logs:
  - species
  - available volume
  - grade
- advantages of veneer-based products compared to solid wood products:
  - versatility and suitability for diverse applications
  - greater control over the wood property variability and gradients within the final product
  - ability to span wide supports
  - improved shear strength and impact resistance.
- uses of rotary peeled veneers:
  - plywood panels
  - LVL

Knowledge Evidence
• multilaminar wood • veneer based mass panels • veneer production process: • log debarking and bucking • conditioning • peeling • clipping • drying • joint or veneer repair • crossbands • grading - plywood grading and LVL grading • quality checks conducted during veneer production • factors impacting on quality and workflow in veneer production: • availability of suitable timber species and quality • veneer quality • operational, supervisory and management skills • access to and maintenance of plant and equipment • types, features, operating principles and safety requirements for lathes used in rotary peeling: • spindled • hybrid • spindleless • causes and remedies for common problems in rotary spinning process: • thermal distortion of the knife • knife condition and set-up • spin-out • barrelling • cotton reeling • mixing wet and dry veneer are explained. • mis tracking • veneer peeling defects • effects of wood properties on veneer quality • characteristics of green veneer: • not dried • high moisture content • green veneer processing: • scarfing • composing • welding • jointing • common problems in the scarfing process and appropriate corrective actions • common composer quality problems and appropriate corrective actions • purpose of veneer drying • stages in veneer drying • moisture gradients and their impacts on veneer quality • common defects resulting from veneer drying and methods to reduce or eliminate these defects • common operational problems in veneer drying and appropriate corrective actions. • safety and environmental hazards associated with veneer production • reasons for grading veneer sheets • grading criteria and grade classes for veneer in Australian Standards • uses and features of visual grading and automatic grading • common defects affecting veneer grade: • sound knot • loose knot • pin knot • hole • split

Knowledge Evidence

- gum pocket
- gum vein
- insect attack
- discoloration
- grain tear out
- knife mark
- fungal decay
- waviness
- rough
- scratch
- joint
- bark pocket

- operating principles of automatic veneer strength, moisture and appearance grading systems.

Assessment Conditions

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

- physical conditions:
  - skills must be demonstrated in a work environment or an environment that accurately represents workplace conditions
- resources, equipment and materials:
  - reference materials on constructional veneer preparation in LVL or plywood production
  - Internet access and computer software and hardware for accessing technical information on constructional veneer preparation in LVL or plywood production
- specifications:
  - Australian Standards relevant to constructional veneer preparation in LVL or plywood production.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links	Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47