



Australian Government

FWPSAW3251 Apply principles of blade design to sawing procedures

Release: 1

FWPSAW3251 Apply principles of blade design to sawing procedures

Modification History

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 5.0.

Application

This unit of competency describes the skills and knowledge required to select blades for various sawing operations and apply principles of blade design in the selection to maintain quality production output.

The unit applies to individuals who maintain the quality of saw blades in a saw technician workshop or timber processing facility.

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

Sawmilling and Processing (SAW)

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. Prepare for work	1.1 Review work order to determine job requirements and, where required, seek clarification from appropriate personnel 1.2 Review workplace health and safety procedures, including the use of personal protective equipment, equipment lock-out and safe manual

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	handling techniques 1.3 Identify, assess and take actions to mitigate risks and hazards associated with selecting and sawing logs in multi-species operations 1.4 Identify workplace environmental protection procedures for minimising and disposing of waste material, cleaning tools and equipment, and maximising energy efficiency
2. Maintain quality output	2.1 Follow quality system procedures for the use and care of blades 2.2 Assess blades visually for defects before processing products and completing work
3. Apply blade design principles	3.1 Classify blades according to type and style suitable for different saws and production requirements 3.2 Identify and evaluate blade characteristics, properties and design capacities according to manufacturer specifications and production requirements 3.3 Select blades to suit material being cut and production requirements 3.4 Plan sawing to minimise blade damage and wear, and to optimise blade lifespan
4. Assess the blade condition	4.1 Identify and resolve during daily operations machinery and equipment issues that can cause product waste and adversely affect blade lifespan 4.2 Assess saw blade condition and recognise the need to rectify blade wear and damage 4.3 Record and report blade faults to appropriate personnel according to blade design specifications

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
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Skill	Description
Numeracy	Measures blade characteristics for different blade types
Navigate the world of work	Understands main tasks, responsibilities and boundaries of own role
Interact with others	Uses modes of communication suitable to purpose to confirm and clarify understanding
Get the work done	Recognises and responds to routine problems

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FWPSAW3251 Apply principles of blade design to sawing procedures	FWPSAW3228 Apply principles of blade design to sawing procedures	Updated performance criteria, performance evidence and knowledge evidence to reflect environmental and workplace health and safety requirements; updated foundation skills; updated unit code to reflect changes and meet compliance	Equivalent unit

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 FWPSAW3251 Apply principles of blade design to sawing procedures

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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, on at least one occasion, the individual has:

- followed work order and relevant workplace health and safety and environmental protection procedures
- selected blades for sawing procedures according to workplace procedures
- identified and evaluated blade characteristics, properties and design capacities for at least three of the following types of blades:
 - circular saw blades
 - band saw blades
 - wide saw blades
 - standard steel
 - tungsten tipped
 - Stellite tipped
- assessed saw blade condition and completed basic records of faults for at least three types of blade
- selected appropriate blades to suit material being cut and production requirements for three separate work orders.

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:

- types of risk and hazards and mitigation measures associated with applying principles of blade design to sawing procedures
- workplace procedures specific to applying principles of blade design to sawing procedures:

- workplace health and safety, with particular emphasis on equipment lock-out and use of personal protective equipment (PPE)
- communication reporting lines
- recording and reporting of processing problems and equipment faults
- environmental protection practices for timber processing operations:
 - reducing water and energy use
 - cleaning plant, tools and equipment
 - disposing of, recycling and reusing timber
- purpose, features and operation of blades:
 - circular saw blades
 - band saw blades
 - gang saw blades
 - wide saw blades
 - standard steel
 - tungsten tipped
 - Stellite tipped
- properties of blades used in the timber processing and manufacturing industry:
 - metal from which blades are made
 - geometry and concentricity
- characteristics of blades and names and purpose of blade parts:
 - tooth pitch
 - kerf
 - gullet
 - tooth face
 - set
 - straightness
 - tooth profile
 - tooth and side clearance angles
 - gullet depth/tooth height
 - tension ring
 - application (crosscutting or ripping)
- methods to optimise the use of saw blades
- effects of different types of materials on saw blade wear
- typical machinery and equipment issues that can cause product waste and adversely affect blade lifespan
- methods for assessing saw blade condition
- workplace quality system procedures for the use and care of blades.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a timber processing or manufacturing facility or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - blades for at least three of the following types of saws: circular saws, narrow band saws and wide band saws
 - different styles of blade: solid tooth, tungsten tipped and Stellite tipped
 - maintenance tools and equipment for blades
 - personal protective equipment suitable for handling blades
- specifications:
 - template documents for recording blade faults
 - manufacturer specifications for blade use and recommendations for repairing and maintaining blades
 - work orders with specific information on materials to be cut and production requirements
 - workplace quality system procedures for the use and care of blades.

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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