



**Australian Government**

# **FWPSAW3236 Sharpen tipped circular saw blades**

**Release: 1**

# FWPSAW3236 Sharpen tipped circular saw blades

## 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 assess the tipped circular saw blade condition, set up for sharpening, and sharpen saw blades with an automated grinder.

The unit applies to individuals who sharpen tipped circular saws in a saw technician workshop or sawmill.

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 sharpening                        | 1.1 Review work order to determine job requirements and, where required, seek clarification from appropriate personnel<br><br>1.2 Review workplace health and safety procedures, including the use of personal protective equipment, equipment lock-out and safe manual handling techniques |

| <b>Elements</b>                                  | <b>Performance Criteria</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i> | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                  | <p>1.3 Identify, assess and take actions to mitigate risks and hazards associated with sharpening tipped circular saws</p> <p>1.4 Identify workplace environmental protection procedures for minimising and disposing of waste material, cleaning tools and equipment, and maximising energy efficiency</p> <p>1.5 Select appropriate tools and equipment to sharpen tipped circular saw blades, and check for operational effectiveness according to manufacturer recommendations</p>                                                                                                                                                                                                                                                           |
| 2. Assess tipped circular saw blade condition    | <p>2.1 Assess cutting performance of blade and determine need to replace or sharpen</p> <p>2.2 Assess condition of prior repairs, teeth, kerf of the tips, and straightness of blade</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. Set up sharpening equipment                   | <p>3.1 Select sharpening machine with suitable grinding wheel diameter, and change or dress grinding wheel as required</p> <p>3.2 Adjust machine settings to suit required blade geometry</p> <p>3.3 Set saw blade in the machine to ensure tooth profile and geometry are maintained</p> <p>3.4 Prepare grinding coolant system according to manufacturer instructions</p>                                                                                                                                                                                                                                                                                                                                                                      |
| 4. Sharpen tipped circular saw blade             | <p>4.1 Select saw blade and grinding wheel angles, speeds and feeds to suit</p> <p>4.2 Sharpen tips to achieve required finish, maintaining original profile and pitch, according to industry standards</p> <p>4.3 Ensure variations in tooth height and depth of cut are within industry tolerances for concentricity</p> <p>4.4 Set stock removal rate, wheel speeds, and saw tooth feed rate to achieve industry standards of sharpness</p> <p>4.5 Remove tipped circular saw blades from sharpening equipment</p> <p>4.6 Dispose of unserviceable tipped circular saw blades according to environmental protection practices</p> <p>4.7 Identify routine processing and equipment faults, and resolve or report to appropriate personnel</p> |

## 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                    | <ul style="list-style-type: none"><li>Extracts essential information from operational manuals to determine safe operating procedures for equipment</li></ul>                                                                                                                              |
| Writing                    | <ul style="list-style-type: none"><li>Prepares routine written reports using required format, language and structure</li></ul>                                                                                                                                                            |
| Oral communication         | <ul style="list-style-type: none"><li>Employs active listening and questioning to clarify content of work orders</li></ul>                                                                                                                                                                |
| Numeracy                   | <ul style="list-style-type: none"><li>Completes precise calculations to determine angle, pitch, height and depth to which machine teeth are to be machined</li><li>Applies standard units of measurement in describing a correct angle, pitch height and depth of machine teeth</li></ul> |
| Navigate the world of work | <ul style="list-style-type: none"><li>Understands main tasks, responsibilities and boundaries of own role</li></ul>                                                                                                                                                                       |
| Interact with others       | <ul style="list-style-type: none"><li>Uses modes of communication suitable to purpose to confirm and clarify understanding</li></ul>                                                                                                                                                      |
| Get the work done          | <ul style="list-style-type: none"><li>Recognises and responds to routine problems</li></ul>                                                                                                                                                                                               |

## Unit Mapping Information

| Code and title current version                   | Code and title previous version            | Comments                                                                                                         | Equivalence status |
|--------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------|
| FWPSAW3236<br>Sharpen tipped circular saw blades | FWPSAW3212<br>Sharpen tipped circular saws | Split element 2; minor updates to the knowledge evidence; updated unit code and title for clarity and 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 FWPSAW3236 Sharpen tipped circular saw blades

## Modification History

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

## 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
- assessed the condition of blade teeth for:
  - sharpness of each tooth
  - damage to teeth
  - pitch
  - kerf width
- set up the sharpening machine
- sharpened tipped circular saw blades according to a work order and workplace requirements
- removed tipped circular saw blades from sharpening equipment.

## 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:

- basic knowledge of physics of sawing, including:
  - saw blade material and properties
  - impact of timber properties on saw blades
  - direction of cut
  - forces on a blade
  - heat removal
  - sawtooth configuration
- purpose, features and operation of circular saws for which tipped blades are sharpened:

- circular saws for timber processing
- cold saws for ferrous and non-ferrous alloys
- features and names of different parts of circular saw blades
- purpose, features and operation of tools and equipment used to sharpen tipped circular saw blades:
  - automated grinding machine with manual or automatic adjustment
  - abrasive wheels
- coolants used in the sharpening process, and impact on efficient sharpening
- importance of sharpening and tension to match requirements for:
  - characteristics of various materials sawn
  - speed of the sawing process
  - direction of the sawing process
  - cutting angle for sawing
  - saw blade specifications
- methods for:
  - assessing saw blade condition
  - sharpening blades to specified requirements
  - setting teeth to a specified kerf
  - maintaining concentricity of teeth
- tooth pitch and tooth angles at which blades are sharpened (blade geometry)
- range of speeds at which abrasive wheels can be operated without damaging blades
- types of risk and hazards and mitigation measures associated with sharpening tipped circular saw blades
- workplace procedures specific to sharpening tipped circular saw blades:
  - workplace health and safety, with particular emphasis on safe manual handling and use of personal protective equipment (PPE)
  - communication reporting lines
  - recording and reporting processing and equipment faults
- environmental protection practices for repairing and maintaining tools and equipment in sawmills:
  - reducing water and energy use
  - cleaning plant, tools and equipment
  - disposing of, recycling and reusing materials.

## Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
  - skills must be demonstrated in a saw technician workshop, a sawmill or an environment that accurately represents workplace conditions
- resources, equipment and materials:

- tools and equipment used to sharpen tipped circular saw blades, including manually or automatically adjustable grinding machines, abrasive wheels and measuring equipment
- circular saws for which blades are to be sharpened, including circular saws and cold saws
- tipped circular saw blades for sharpening
- PPE suitable for sharpening tipped circular saw blades
- specifications:
  - template documents for recording processing and equipment faults
  - manufacturer instructions for use, repair and maintenance of equipment
  - work order with specific instructions for sharpening tipped circular saw blades
  - workplace procedures for sharpening tipped circular saw blades.

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

## Links

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