



Australian Government

Department of Education, Employment and Workplace Relations

FPISAW3208B Sharpen circular saws

Release: 1

FPISAW3208B Sharpen circular saws

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to assess the circular saw condition, set up for sharpening and sharpen the saw with a manually controlled grinder

General workplace legislative and regulatory requirements apply to this unit; however there are no specific licensing or certification requirements at the time of publication

This unit replaces FPISAW3208A Sharpen circular saws

Application of the Unit

Application of the unit

The unit involves sharpening circular saws in a forest products factory setting

The skills and knowledge required for competent workplace performance are to be used within the scope of the person's job and authority

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

Employability Skills Information

Employability skills This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for sharpening	1.1. Applicable Occupational Health and Safety (OHS), environmental, legislative and organisational requirements relevant to sharpening circular saws are identified and followed 1.2. Work order is reviewed and checked with appropriate personnel 1.3. Equipment is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer's recommendations 1.4. Sharpening process is planned in line with site procedures and environmental requirements 1.5. Communication with others is established and maintained in line with OHS requirements
2. Assess condition and set up sharpening equipment	2.1. Cutting performance of blade is assessed for sharpening requirements and blade replacement is reviewed in line with site requirements 2.2. Condition of teeth, set, straightness of blade and prior repairs are assessed for suitability to site requirements 2.3. Sharpening machine with suitable wheel diameter and thickness is selected and grinding wheel changed, profiled or dressed 2.4. Machine settings are adjusted to suit required tooth profile geometry, blade set or kerf, blade thickness and diameter to manufacturer's recommendations 2.5. Saw is set up in grinder with appropriate attachments for tooth pitch
3. Sharpen circular saw blade	3.1. Pre start-up checks are carried out on equipment in line with site requirements 3.2. Teeth face and gullet are ground to achieve the required sharpness and surface finish 3.3. Tooth profile is maintained to industry standards 3.4. Variations in tooth height are kept within industry or manufacturer tolerances for concentricity 3.5. Hand feeds of wheel and saw are controlled to minimise wear, avoid burn marks and maintain a smooth surface finish on all surfaces 3.6. Circular saws that cannot be sharpened or are damaged in the sharpening process are disposed of in line with site procedures, manufacturer's

ELEMENT**PERFORMANCE CRITERIA**

- recommendations and environmental requirements
- 3.7. Sharpening and equipment faults are ***recorded and reported*** to the appropriate personnel

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level required for this unit

Required skills

- Technical skills sufficient to use and maintain relevant tools, machinery and equipment; efficiently and safely sharpen circular saws
- Communication skills and interpersonal techniques sufficient to interact appropriately with colleagues and others in the workplace
- Literacy skills sufficient to accurately record and report workplace information, and maintain documentation
- Numeracy skills sufficient to estimate, measure and calculate time required to complete a task
- Problem solving skills sufficient to identify problems and equipment faults and demonstrate appropriate response procedures

Required knowledge

- Applicable Commonwealth, State or Territory legislation, regulations, standards, codes of practice and established safe practices relevant to the full range of processes for sharpening circular saws
- Environmental protection requirements, including the safe disposal of waste material, minimising carbon emissions and the cleaning of plant, tools and equipment
- Organisational and site standards, requirements, policies and procedures for sharpening circular saws
- Environmental risks and hazards
- Characteristics of circular saw blades
- Sharpening methods and geometry
- Teeth setting methods
- Established communication channels and protocols
- Problem identification and resolution strategies and common fault finding techniques
- Types of tools and equipment and procedures for their safe use, operation and maintenance
- Appropriate mathematical procedures for estimating and measuring, including

REQUIRED SKILLS AND KNOWLEDGE

- calculating time to complete tasks
- Procedures for recording and reporting workplace information

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to provide evidence that they can safely and efficiently sharpen circular saws within organisational requirements

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to, and satisfy, all of the requirements of the elements of this unit and include demonstration of:

- following applicable Commonwealth, State or Territory legislative and regulatory requirements and codes of practice relevant to sharpening circular saws
- following organisational policies and procedures relevant to sharpening circular saws
- sharpening circular saws in line with the work order and within prescribed organisational requirements
- removing and replacing circular saw blades from equipment

Context of and specific resources for assessment

- Competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of required knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to follow relevant regulatory or Australian Standards requirements
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials and equipment relevant to undertaking work applicable to this unit
 - specifications and work instructions

Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with

EVIDENCE GUIDE

application of required knowledge

- Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of employability skills
- Assessment methods must confirm the ability to access and correctly interpret and apply the required knowledge
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable adjustment may be applied during assessment
- Language and literacy demands of the assessment task should not be higher than those of the work role

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

OHS requirements:

are to be in line with applicable Commonwealth, State or Territory legislation and regulations, and organisational safety policies and procedures, and may include:

RANGE STATEMENT

- personal protective equipment and clothing
- safety equipment
- first aid equipment
- fire fighting equipment
- hazard and risk control
- fatigue management
- elimination of hazardous materials and substances
- safe forest practices including required actions relating to forest fire
- manual handling including shifting, lifting and carrying
- machine isolation and guarding
- legislation
- organisational policies and procedures
- workplace practices

Environmental requirements
may include:

Legislative requirements:

are to be in line with applicable Commonwealth, State or Territory legislation, regulations, certification requirements and codes of practice and may include:

- award and enterprise agreements
- industrial relations
- Australian Standards
- confidentiality and privacy
- OHS
- the environment
- equal opportunity
- anti-discrimination
- relevant industry codes of practice
- duty of care
- legal
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- quality assurance
- procedural manuals
- quality and continuous improvement processes and standards
- OHS, emergency and evacuation procedures
- ethical standards
- recording and reporting requirements

Organisational requirements
may include:

RANGE STATEMENT

- equipment use and maintenance and storage requirements
- environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)

Sharpening is to include:

- the amount of material removed from the tooth profile
- the ability to produce the required profile
- the speed at which the abrasive wheel can remove material without affecting steel characteristics
- the quality of surface texture left by the abrasive wheel along the entire profile and at the intersection of all cutting edge angles

Work order is to include:

- instructions for the sharpening of circular saw blades in designated equipment

and may include:

- instructions for the environmental monitoring of work and procedures
- environmental care requirements relevant to the work

Appropriate personnel may include:

- supervisors
- suppliers
- clients
- colleagues
- managers

Equipment may include:

- gulleting and grinding machines
- machine attachments
- hand-held tools
- abrasive wheels

and is to include:

- procedures for equipment lock-out, i.e. protecting operators and co-workers from accidental injury by isolating the machine from the power source

Communication may include:

- verbal and non-verbal language
- constructive feedback
- active listening
- questioning to clarify and confirm understanding
- use of positive, confident and cooperative

RANGE STATEMENT

	language
	• use of language and concepts appropriate to individual social and cultural differences • control of tone of voice • body language
Cutting performance is to include:	• saw performance balanced against achievement of required production time • degree of deviation in the range of sawn products
Blades may include:	• circular cross cut blades used for cutting timber products • rip saw blades used for cutting timber products
Teeth are to include:	• sharpness of tooth cutting edges • angles containing within the tooth profile • tooth strength • damage to teeth • pitch • depth • and number of teeth per metre
Set	• is the distance cutting edge points extend from the blade surface (or plane) to provide the blade clearance from the material being sawn • in wide bandsaw blades is achieved by swaging and shaping, or tipping tooth points • in narrow bandsaw blades applied to, for example, alternate spring set and wave set to provide clearance
Straightness	is the assessment of blade level and flatness against a straight edge or plumb line when blade is in a vertical position
Dressing	involves cleaning or shaving the top surface of the grinding wheel to remove the build up of old sharpening metal and coolant and dull abrasive grains
Geometry	• is the tooth pitch and the tooth angles that a blade is sharpened at • must match the type and characteristics of the material being sawn
Pitch	is the distance between the tips of the teeth on the

RANGE STATEMENT

saw blade

Pre start-up checks

are conducted to ensure:

- machine has been set-up correctly
- systems are performing accurately
- machinery is operating to optimum performance

Face

- is the front of a tooth along which the angle of hook or rake is measured
- on square ground rip saws, the tooth face is parallel to the surface of the material being sawn

Gullet

is the hollow area between tooth points

Profile

- is the shape or outline of the teeth designed to suit the characteristics of the materials being sawn
- changes in line with sawing speeds, saw blade specifications, the material being sawn and the direction of the sawing process

Concentricity

- is sharpening blades so that each tooth point on a round saw is at the same radius from the centre of the saw blade
- is critical to prevention of blade vibration - when tooth points are at different radii from the blade centre the saw is 'out-of round' or non-concentric

Disposing of may include:

- recycling circular saws that cannot be sharpened or are damaged in the process
- re-using circular saws that cannot be sharpened or are damaged in the process

Records and reports may include:

- the blade type
- size
- inspection
- grading and labelling outcomes
- storage locations
- quality outcomes
- hazards
- incidents
- equipment malfunctions

and may be:

- manual

RANGE STATEMENT

- using a computer-based system another appropriate organisational communication system

Unit Sector(s)

Unit sector No sector assigned

Co-requisite units

Co-requisite units

Competency field

Competency field Sawmilling and Processing