



Australian Government

Department of Education, Employment and Workplace Relations

FPISAW3212B Sharpen tipped circular saws

Release: 1

FPISAW3212B Sharpen tipped circular saws

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to assess the tipped circular saw condition, set up for sharpening and sharpen the saw with an automated 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 FPISAW3212A Sharpen tipped circular saws

Application of the Unit

Application of the unit

The unit involves sharpening tipped 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 tipped circular saws are identified and followed 1.2. Work order is reviewed and checked with appropriate personnel 1.3. Tipped circular saw blades to be sharpened are removed or appropriate equipment fitted to allow saw to be sharpened in machinery 1.4. Equipment is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer's recommendations 1.5. Sharpening process is planned in line with site procedures and environmental requirements 1.6. 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 reviewed in line with site requirements 2.2. Condition of teeth, straightness of blade and prior repairs are assessed for suitability to site requirements 2.3. Sharpening machine with suitable wheel diameter is selected and grinding wheel changed or dressed 2.4. Machine settings are adjusted to suit required blade geometry and blade set to manufacturer's recommendations 2.5. Saw is set up in grinder or grinder set up on saw while in machine to ensure tooth profile and geometry are maintained
3. Sharpen tipped circular saw blade	3.1. Pre start-up checks are carried out on equipment in line with site requirements 3.2. Grinding coolant system is prepared in line with site requirements 3.3. Saw and grinding wheel angles, speeds and feeds are selected to suit saw 3.4. Teeth face and gullet are ground to achieve the sharpened finish requested and to maintain original profile 3.5. Tooth profile and pitch are maintained to industry

ELEMENT**PERFORMANCE CRITERIA**

standards

- 3.6. Variations in tooth height and depth of cut are brought within industry tolerances for ***concentricity***
- 3.7. Feeds of wheel and saw are set to minimise wear and to avoid burn marks
- 3.8. Tipped circular saws that cannot be sharpened or are damaged in the sharpening process and cannot be repaired are ***disposed of*** in line with site procedures, manufacturer's recommendations and environmental requirements
- 3.9. 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 tipped 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 tipped 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 tipped circular saws
- Environmental risks and hazards

REQUIRED SKILLS AND KNOWLEDGE

- Characteristics of tipped circular saw blades
- Sharpening methods and geometry
- Teeth settings 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 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 tipped 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 tipped circular saws
- following organisational policies and procedures relevant to sharpening tipped circular saws
- sharpening tipped circular saws in line with the work order and within prescribed organisational requirements
- removing and replacing tipped 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

EVIDENCE GUIDE

accuracy of performance (over time and in a range of workplace relevant contexts) together with 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

RANGE STATEMENT

organisational safety policies and procedures, and may include:

- 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

Organisational requirements
may include:

- 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

RANGE STATEMENT

- OHS, emergency and evacuation procedures
 - ethical standards
 - recording and reporting requirements
 - equipment use and maintenance and storage requirements
 - environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)
- Saws** may include:
- circular saws
 - hot saws
 - cold saws
- Work order** is to include:
- instructions for the sharpening of tipped 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
- Tipped circular saw blades** may include:
- tipped circular saw blades used for cutting timber
- and tips may include:
- tungsten carbide
 - satellite
 - other alloyed materials such as high speed steel
- Sharpening** is to include:
- face
 - gullet
 - pitch
 - profile
 - angle
 - depth of cut
 - speed the blade passes over the grinding wheel to obtain a sharp edge
- Equipment** may include:
- manually or automatically adjustable grinding machines

RANGE STATEMENT

- abrasive wheels
- measuring tools equipment

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 language
- use of language and concepts appropriate to individual social and cultural differences
- control of tone of voice
- body language

Cutting performance may include:

- length of production time achieved by the blade
- whether the blade performed with site tolerances of allowable deviation
- whether the surface finish was in line with site quality requirements

Teeth are to include:

- sharpness of each tooth
- damage to teeth
- pitch
- number of teeth per metre

Straightness

is assessment of the entire blade to ensure it has not bent out of shape or warped in any way

Dressing

is the process of cleaning or shaving the top surface of the grinding wheel to remove the build up of old sharpening metal and coolant

Geometry

is the pitch and angle that a blade is sharpened at, allowing for the material they will be cutting

Profile

- is the shape of the teeth in line with the timber being cut
- usual direction of cutting, crosscut across the grain and ripping with the grain

RANGE STATEMENT

Pre start-up checks

are conducted to ensure:

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

Coolant

is used in conjunction with grinding operations to cool the metal blade as it generates heat from the sharpening process to prevent burning

Speeds and feeds

- is the speed the grinding wheel rotates at, too fast and it may burn the metal, too slow and it may produce a rough finish or grab the blade
- similarly, the power feed controls movement of the blade to the desired rate

Face is to include:

- front edge of each tooth
- cutting part of the tooth

Gullet

is the bottom hollowed section between each tooth

Pitch

is the distance between the tips of the teeth on the saw blade

Concentricity

is ensuring all teeth are at the same radius from the saw blade centre and that one tip is not higher than another

Disposing of may include:

- recycling tipped circular saws that cannot be sharpened or cannot be repaired
- re-using tipped circular saws that cannot be sharpened or cannot be repaired

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

RANGE STATEMENT

system

Unit Sector(s)

Unit sector No sector assigned

Co-requisite units

Co-requisite units

Competency field

Competency field Sawmilling and Processing