



Australian Government

Department of Education, Employment and Workplace Relations

FPISAW3228B Apply principles of blade design to sawing procedures

Release: 1

FPISAW3228B Apply principles of blade design to sawing procedures

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to maintain quality output by selecting blades for various sawing operations and by applying principles of blade design

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

Application of the Unit

Application of the unit

The unit involves applying principles of blade design to sawing procedures 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. Maintain quality output	1.1. Applicable Occupational Health and Safety (OHS), environmental, legislative and organisational requirements relevant to applying principles of blade design to sawing procedures are identified and followed 1.2. Quality system procedures are applied and adhered to 1.3. Blades are visually inspected before processing products and completing work 1.4. Product specifications are checked and conformed with 1.5. Communication with others is established and maintained in line with OHS requirements
2. Apply blade design principles	2.1. Types and styles of blades are classified in line with workplace procedures 2.2. Properties of blades are compared with product specification requirements 2.3. Blade characteristics and design capacities are evaluated and compared to work requirements 2.4. Blades are selected to suit work requirements, material being cut and environmental requirements
3. Monitor and control blade care	3.1. Sawing is planned to optimise the resource value and minimise damage and wear to blades 3.2. Machinery and equipment are regularly maintained and adjusted to minimise product waste and maximise blade lifespan 3.3. Problems are immediately assessed and rectified to avoid damage to blades 3.4. Damage to blades is dealt with in line with site procedures, manufacturer's recommendations and environmental requirements 3.5. Quality output through applying blade design principles and blade care procedures are recorded and reported in line with workplace procedures

Required Skills and Knowledge

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 select blades for sawing procedures
- 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 blade 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 applying principles of blade design to sawing procedures
- 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 applying principles of blade design to sawing procedures
- Environmental risks and hazards
- Blade design principles
- Optimisation of saw blade use
- Quality systems
- Blade care and processing
- 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 select blades for sawing procedures in line with 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 applying principles of blade design to sawing procedures
- following organisational policies and procedures relevant to applying principles of blade design to sawing procedures
- selecting blades for sawing procedures in line with environmental legislation and workplace procedures
- 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

Context of and specific resources for assessment

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

Environmental requirements
may include:

- legislation
- organisational policies and procedures
- workplace practices

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
- OHS, emergency and evacuation procedures
- ethical standards
- recording and reporting requirements
- equipment use and maintenance and storage

RANGE STATEMENT

- requirements
- environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)
- Quality systems** may include:
 - enterprise based systems
 - second party certification
 - third party certification
 - ISO9000 series
 - other regulatory systems
- Blades** are to include:
 - all types of saw blades used by the enterprise
- Visual inspection** may include:
 - assessing the condition of blades
 - assessing any visual wear or damage which may have occurred during operation
- Product** may include:
 - trees
 - logs
 - timber
 - panels
 - boards
- Product specifications** may include:
 - specifications set for optimisation of timber in line with the available resource
 - customer requirements
 - industry standard cross sections and lengths
 - enterprise standards
- 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
- Types** may include:
 - circular saw blades
 - band saw blades
 - gang saw blades
 - wide saw blades
- Styles** may include:
 - standard steel blades
 - tungsten tipped blades

RANGE STATEMENT

Properties are to include:

- stellite tipped blades
- metal from which blades are made
- tensile strength of the blade
- geometry and concentricity

Characteristics are to include:

- blade pitch
- kerf
- gullet
- face
- set
- straightness
- profile
- angle
- depth
- teeth shape
- application (cross cut or ripping)
- number of teeth per metre

Design capacity

is the rated capacity of the blade in terms of speed (for tension and temperature) and hardness

Sawing

is the process of cutting products using cross-cut or ripping methods

Optimising includes:

- planning the sawing of timber to achieve the most from it
- ensuring environmental requirements are central to this planning process

Dealing with may include:

- repairing blunt or damaged saws and saw blades
- disposing of blunt or damaged saws and saw blades that cannot be repaired

Records and reports may include:

- maintaining quality and product care procedures
- risk
- hazards
- incidents
- equipment malfunctions

and may be:

- manual
- using a computer-based system or 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