



Australian Government

Department of Education, Employment and Workplace Relations

FPICOT3225B Mechanically stress grade timber

Release: 1

FPICOT3225B Mechanically stress grade timber

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to stress grade timber with mechanical stress graders and high speed mechanical graders to test boards for strength and durability against set classifications

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 FPICOT3225A Mechanically stress grade timber

Application of the Unit

Application of the unit

The unit involves mechanically stress-grading timber 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

Not Applicable

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 stress-grading	1.1. Applicable <i>occupational health and safety</i> (OHS), <i>environmental</i> , <i>legislative</i> and <i>organisational requirements</i> relevant to mechanically stress-grading timber are identified and followed 1.2. <i>Work order</i> is reviewed and clarified with <i>appropriate personnel</i> 1.3. Type and quantity of <i>timber</i> to be <i>stress graded</i> is assessed and acquired from the <i>storage location</i> 1.4. <i>Equipment</i> is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer recommendations 1.5. Stress-grading process is planned in line with site procedures 1.6. <i>Communication</i> with others is established and maintained in line with OHS requirements
2. Stress grade timber	2.1. <i>Pre-startup checks</i> are carried out on equipment in line with site requirements 2.2. <i>Spray guns or branding rolls</i> are set up for use in line with site procedures and environmental requirements 2.3. <i>Calibration</i> procedure is performed using <i>verification boards</i> and <i>grade thresholds</i> are set in line with industry standards and site procedures 2.4. Grading process is performed automatically and material flow to the machine is monitored and adjusted 2.5. Machinery is monitored to ensure consistent grade marking and that appearance of boards meets industry standards 2.6. Samples for <i>independent testing</i> are withdrawn and prepared in line with testing procedures 2.7. Stress-grading process and equipment faults are <i>recorded and reported</i> to the appropriate personnel
3. Conduct operator maintenance	3.1. Equipment lock-out procedures are followed in line with OHS legislation and site procedures 3.2. <i>Photo-electric cells and reflectors</i> are regularly checked and cleaned 3.3. Spray guns or branding rolls are checked and refilled 3.4. Mechanical stress grade rollers, auto-feed and load

ELEMENT**PERFORMANCE CRITERIA**

- pressure are adjusted and maintained
- 3.5. Stress-grading area is kept clear of dust, shavings and debris in line with OHS requirements and environmental requirements

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 mechanically stress grade timber
- Communication skills sufficient to use appropriate communication and interpersonal techniques with colleagues and others
- Literacy skills sufficient to record and report workplace information; maintain documentation
- Numeracy skills sufficient to measure, estimate and calculate time required to complete a task
- Problem solving skills sufficient to identify problems and equipment faults; 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 mechanically stress-grading timber
- Environmental protection requirements, including the safe disposal of waste material (including preservative treated timber), the safe use and storage of chemicals, and the cleaning of plant, tools and equipment
- Organisational and site standards, requirements, policies and procedures for mechanically stress-grading timber
- Environmental risks and hazards
- Mechanical stress-grading techniques
- Grading markings and standards
- Methods of visual inspection
- Characteristics of timber
- Stress-grading equipment calibration and grade thresholds
- Established communication channels and protocols
- Problem identification and resolution strategies, and common fault finding

REQUIRED SKILLS AND KNOWLEDGE

techniques

- Types of tools and equipment, and procedures for their safe use 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 mechanically stress grade timber 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 mechanically stress-grading timber
- following organisational policies and procedures relevant to mechanically stress-grading timber
- mechanically stress-grading timber in readiness for storage and/or processing
- setting stress-grading equipment calibrations and grade thresholds
- conducting operator maintenance on mechanical stress-grading 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

EVIDENCE GUIDE

- Assessment methods must confirm consistency and 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. **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,

RANGE STATEMENT

state or territory legislation and regulations, and 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
- 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
- OHS, emergency and evacuation procedures

RANGE STATEMENT

- ethical standards
 - recording and reporting requirements
 - equipment use, maintenance and storage requirements
 - environmental management requirements (waste minimisation and disposal, recycling and re-use guidelines)
- Work order** is to include:
- instructions for the mechanical stress-grading of material
- and may include:
- type
 - width
 - length
 - thickness
 - quantity
 - 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
- Timber** may include:
- native timber species
 - imported timber species
 - dressed timber
 - in-the-rough timber
 - preservative treated timber
- Stress-grading** includes:
- mechanical methods of testing board strength and durability
 - marking and classifying timber to a grade of quality
- Storage locations** may include:
- storage racks
 - storage bays
 - bins
 - stacks
 - pallet boxes
 - modularised storage components
 - temporary stacking bays (stand, frame or

RANGE STATEMENT

ground)

and may be divided into:

- standard product classification
- product designation
- size
- dimension
- stack number
- weight
- grade
- shelf life
- stock rotation position
- procedures for equipment lock-out, such as protecting operators and co-workers from accidental injury by isolating the machine from the power source

Equipment is to include:

and may include:

- mechanical stress-graders or high speed mechanical graders
- spray guns
- branding rolls

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

Pre-startup checks

are conducted to ensure:

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

Spray guns and branding rolls

are used to mark timber automatically with grade-related dyes

Calibration

is the setting of the machine to the desired stress grade level using verification boards in line with

RANGE STATEMENT

industry standards

Verification boards

- are used to ensure the calibration is correct
- have been previously assessed as being accurate

Grade thresholds

are the variations between one grade level and another determining if a board is considered in the higher or lower grade

Independent testing

is the process of randomly selecting stress graded boards for independent testing, ensuring that enterprise calibrations and grade thresholds are accurate and that grades follow industry standards

Records and reports may include:

- stress-grading requirements
- product type
- size
- inspection information
- grading and marking outcomes
- storage locations
- quality outcomes
- hazards
- incidents
- equipment malfunctions

and may be:

- manual
- a computer-based system
- other appropriate organisational communication system

Photo-electric cells and reflectors are sensory devices that calculate stress levels of boards

Unit Sector(s)

Not Applicable

Competency field

Competency field

Common Technical