



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **FPICOT2215B Visually stress grade hardwood**

**Release: 1**

## **FPICOT2215B Visually stress grade hardwood**

### **Modification History**

Not Applicable

### **Unit Descriptor**

#### **Unit descriptor**

This unit describes the outcomes required to visually stress grade hardwood by testing material 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 FPICOT2215A Visually stress grade hardwood

### **Application of the Unit**

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The unit involves visually stress-grading hardwood 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 visually stress-grading hardwood are identified and followed 1.2. <i>Work order</i> is reviewed and clarified with <i>appropriate personnel</i> 1.3. <i>Grading</i> requirements are identified in line with site procedures, <i>standards</i> and specifications 1.4. Materials, hardware items, tools and <i>equipment</i> requirements are identified from work order and obtained in line with workplace procedures 1.5. <i>Hardwood</i> to be graded is positioned to provide appropriate access and facilitate efficient workflow 1.6. <i>Communication</i> with others is established and maintained in line with OHS requirements and site procedures
2. Evaluate hardwood	2.1. <i>Species</i> is identified and status of <i>seasoning</i> is checked in line with site procedures 2.2. Size and <i>tolerance</i> measurements are recorded accurately in line with site requirements 2.3. <i>Characteristics</i> are established and evaluated in line with standards and product specifications 2.4. <i>Moisture content</i> is checked, measured and evaluated against standards and <i>seasoning</i> requirements
3. Grade hardwood	3.1. Hardwood is visually stress graded based on grading standards and criteria in line with required <i>structural grade</i> 3.2. Characteristics with the greatest limiting effect on the grade are diagnosed and checked 3.3. <i>Appearance</i> criteria are assessed and timber is marked, segregated and <i>disposed of</i> in line with site procedures and environmental requirements 3.4. Results of grading are <i>recorded and reported</i> in line with workplace procedures

## 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 identify and apply correct methods and procedures when preparing, evaluating and grading hardwood; use and maintain relevant tools, machinery and equipment; efficiently and safely visually stress grade hardwood
- Communication skills sufficient to use effective communication and interpersonal techniques with colleagues and others; locate, record and report information
- Literacy skills sufficient to follow legislation, regulations, standards, codes of practice and established safe practices and procedures when visually stress-grading hardwood; access, identify and apply information relevant to hardwood grading
- Numeracy skills sufficient to estimate, measure and calculate sizes and time required to complete a task
- Problem solving skills sufficient to review and identify work requirements; identify problems, malfunctions and defects; 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 visually stress-grading hardwood
- Environmental protection requirements, including the safe disposal of waste material (including preservative treated timber)
- Organisational and site standards, requirements, policies and procedures for visually stress-grading hardwood
- Environmental risks and hazards
- Criteria for recycling and re-using timber with inappropriate defects or contamination
- Visual stress-grading techniques
- Grading markings and standards
- Methods of visual inspection
- Characteristics and properties of hardwood
- Stress-grading equipment calibration and grade thresholds
- Storage systems and labelling procedures
- Established communication channels and protocols
- Problem identification and resolution strategies, and common fault finding techniques
- Types of tools and equipment, and procedures for their 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 visually grade hardwood by following stress-grading rules and regulations

### 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 visually stress-grading hardwood
- following organisational policies and procedures relevant to visually stress-grading hardwood
- preparing for stress-grading, including accurately interpreting grading requirements
- stress-grading hardwood in readiness for storage or processing

### 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

## EVIDENCE GUIDE

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 organisational safety policies and procedures, and



## RANGE STATEMENT

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
- ethical standards

## RANGE STATEMENT

- 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 visually stress-grading 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
- Grading is to include:**
- visually evaluating material characteristics for classification into various strength and structural grades
- Standards** may include:
- Australian Standards
  - requirements established by the client
  - requirements established by the producer
- Equipment** may include:
- vernier callipers
  - profile gauges
  - moisture meters (resistance and capacitance)
  - tapes
  - marking implements
- Hardwood:**
- usually comes from trees with leaf foliage and has large tube-like vessels or pores consisting of short stubby cells varying in size
- and may include:
- native timber species
  - imported timber species

## RANGE STATEMENT

<b>Communication</b> may include:	<ul style="list-style-type: none"> <li>• dressed timber</li> <li>• in-the-rough timber</li> <li>• preservative treated timber</li> <li>• verbal and non-verbal language</li> <li>• constructive feedback</li> <li>• active listening</li> <li>• questioning to clarify and confirm understanding</li> <li>• use of positive, confident and cooperative language</li> <li>• use of language and concepts appropriate to individual social and cultural differences</li> <li>• control of tone of voice</li> </ul>
<b>Species</b> may include:	<ul style="list-style-type: none"> <li>• native species</li> <li>• imported species</li> </ul>
<b>Seasoning</b>	is the process of drying timber either with kilns or air-drying methods
<b>Tolerance</b>	is the enterprise-accepted deviation from the perfect specifications
<b>Characteristics</b> may include:	<ul style="list-style-type: none"> <li>• knots</li> <li>• borer holes</li> <li>• stain</li> <li>• checks</li> <li>• tight resin pockets</li> <li>• shakes</li> <li>• wane</li> <li>• want</li> <li>• heart and heart shakes</li> <li>• termite galleries</li> <li>• decay</li> <li>• lyctus susceptible sapwood and compression failures and fractures</li> <li>• colour</li> <li>• density</li> <li>• texture</li> <li>• grain</li> <li>• figure</li> <li>• qualities</li> </ul>
<b>Moisture content</b>	is the amount of moisture maintained in timber

## RANGE STATEMENT

after kiln drying or production to avoid cracking and deforming

**Structural grade** is to include:

- structural conformity of the timber
- consistency of the structural quality
- free of defects which may weaken strength, such as knots, shakes and short grain

**Appearance** is to include:

assessing the appropriateness of:

- defects
- contamination
- timber colours
- surface characteristics
- grain pattern

**Disposing of** may include:

- recycling timber with inappropriate defects or contamination
- re-using timber with inappropriate defects or contamination
- redirecting timber with inappropriate defects or contamination for energy recovery

**Records and reports** may include:

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

and may be:

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

## Unit Sector(s)

Not Applicable

## **Competency field**

**Competency field**

Common Technical