FPICOT2216A: Visually stress grade softwood

Description
This unit specifies the outcomes required to visually stress grade softwood to test material for strength and durability against set classifications.

Application of unit
This unit supports the attainment of skills and knowledge required for competent workplace performance in forest and forest products operations of all sizes. The unit applies to a factory environment and involves application of skills and knowledge at a production worker level. These skills and knowledge are to be used within the scope of the person's job and authority.

Performance criteria
1. Prepare for stress-grading
   1.1 Applicable Occupational Health and Safety (OHS), legislative and organisational requirements relevant to grading functions are identified and complied with
   1.2 Work order is reviewed and clarified with appropriate personnel
   1.3 Grading requirements are identified in accordance with site procedures, standards, and specifications
   1.4 Materials, hardware items, tools and equipment requirements are identified from work order and obtained in accordance with workplace procedures
   1.5 Softwood to be graded is positioned to provide appropriate access and facilitate efficient workflow
   1.6 Communication with others is established and maintained in accordance with OHS requirements and site procedures

2. Evaluate softwood
   2.1 Species is identified and status of seasoning checked in accordance with site procedures
   2.2 Size and tolerance measurements are recorded accurately in accordance with site requirements
   2.3 Characteristics are established and evaluated in accordance with standards and product specifications
   2.4 Moisture content is checked, measured and evaluated against standards and seasoning requirements

3. Grade softwood
   3.1 Softwood is visually stress graded based on grading standards and criteria in accordance with required structural grade
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3.2 Characteristics which have the greatest limiting effect on the grade are diagnosed and checked
3.3 Appearance criteria is assessed and timber marked and segregated in accordance with site procedures
3.4 Results of grading are recorded and reported in accordance with workplace procedures

Key competencies

The seven key competencies represent generic skills considered necessary for effective participation by an individual in the workplace.

Performance Level 1 at this level, the candidate is required to undertake tasks effectively
Performance Level 2 at this level, the candidate is required to manage tasks
Performance Level 3 at this level, the candidate is required to use concepts for evaluating and reshaping tasks

<table>
<thead>
<tr>
<th>Key Competency</th>
<th>Example of Application</th>
<th>Performance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicating ideas and information</td>
<td>By communicating in simple language to confirm work requirements, convey information and requests to colleagues, and report and record outcomes for stress-grading softwood</td>
<td>1</td>
</tr>
<tr>
<td>Collecting analysing and organising information</td>
<td>By collecting, organising and understanding information required to undertake stress-grading of softwood</td>
<td>2</td>
</tr>
<tr>
<td>Planning and organising activities</td>
<td>By organising work activities in the correct sequence for stress-grading of softwood to be completed within the designated timeframes</td>
<td>2</td>
</tr>
<tr>
<td>Working with others and in teams</td>
<td>By using effective communication and interpersonal techniques with colleagues and others to maximise confidence, satisfaction and productivity during the process of stress-grading softwood</td>
<td>1</td>
</tr>
<tr>
<td>Using mathematical ideas and techniques</td>
<td>By calculating quantities, assessing moisture content and stress measurement</td>
<td>1</td>
</tr>
<tr>
<td>Solving problems</td>
<td>By establishing effective grading processes which anticipate likely problems to avoid wastage and downtime</td>
<td>1</td>
</tr>
</tbody>
</table>
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| Using technology | By using technology to record and report grading outcomes | 1 |

**Skills and Knowledge**

**Required skills include:**

- comply with legislation, regulations, standards, codes of practice and established safe practices and procedures when visually stress-grading softwood
- review and accurately identify work requirements
- identify and apply correct methods and procedures when preparing, evaluating and grading softwood
- access, identify and apply information relevant to softwood grading
- use and maintain relevant tools, machinery and equipment
- identify problems, malfunctions and defects, and demonstrate appropriate response procedures
- use effective communication and interpersonal techniques with colleagues and others
- efficiently and safely visually stress grade softwood
- accurately locate, record and report information.

**Required knowledge and understanding includes:**

- basic knowledge and understanding of applicable Commonwealth, State or Territory legislation, regulations, standards and codes of practice relevant to the full range of processes for stress-grading softwood
- organisational and site standards, requirements, policies and procedures for selecting timber for stress-grading softwood
- principles of cultural diversity and access and equity
- environmental protection requirements, including the safe disposal of waste material
- established communication channels and protocols
- problem identification and resolution
- types of tools and equipment and procedures for their use, operation and maintenance
- visual stress-grading techniques
- grading markings and standards
- methods of visual inspection
- characteristics and properties of softwood

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- stress-grading equipment calibration and grade thresholds
- storage systems and labelling
- procedures for recording and reporting workplace information
- appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks.

**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.

OHS requirements are to be in accordance with Commonwealth, State or Territory legislation and regulations, and organisational safety policies and procedures. Requirements may include:

- the use of personal protective equipment and clothing
- safety equipment
- first aid equipment
- fire fighting equipment
- hazard and risk control
- elimination of hazardous materials and substances
- manual handling including shifting, lifting and carrying.

Legislative requirements are to be in accordance with applicable legislation from all levels of government that affect organisational operation. Requirements 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, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines).
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Appropriate personnel
- may include supervisors, suppliers, clients, colleagues and managers.

Grading
- is to include visually evaluating material characteristics for classification into varying strength/structural grades.

Standards
- are those contained in Australian Standards and additional requirements established by the client or producer.

Equipment
- may include vernier callipers, profile gauges, moisture meters (resistance and capacitance), tapes and marking implements.

Softwood
- may include native timber species, imported timber species, dressed timber, in-the-rough timber and preservative treated timber. Softwood is non-pored wood, usually comes from trees with needle like foliage and has a more uniform cell structure.

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 and body language.

Species
- may include native or imported species.

Tolerance
- is to include the enterprise accepted deviation from the perfect specifications.

Characteristics
- may include knots, borer holes, stain, checks, tight resin pockets, shakes, wane, want, heart and heart shakes, termite galleries, decay, lyctus susceptible sapwood and compression failures and fractures, colour, density, texture, grain, figure, qualities and uses.

Moisture content
- is the amount of moisture maintained in timber after kiln drying or production to avoid cracking and deforming.

Seasoning
- is to include the process of drying timber either with kilns or air drying methods.

Structural grade
- is to include the structural conformity of the timber and the consistency of the structural quality free of such defects which may weaken strength such as knots, shakes and short grain.
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Appearance

- is to include assessing the appropriateness of defects, contamination, timber colours, surface characteristics, colour and grain pattern.

Records and reports

- may include conducting visual inspection and timber selection, risks, hazards, incidents or equipment malfunctions.
- may be manual, using a computer-based system or another appropriate organisational communication system.

Evidence guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to provide evidence that they can visually grade softwood by following the stress-grading rules and regulations.

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

- Comply with applicable Commonwealth, State or Territory legislative and regulatory requirements and codes of practice, including OHS, environmental and organisational policies and procedures, relevant to visually stress-grading softwood
- Compliance with OHS and environmental regulations, policies and procedures
- Communicate effectively and work safely with others in the work area
- Efficiently prepare for grading including accurate interpretation of grading requirements
- Efficiently stress grade softwood 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 essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements
- The following resources should be made available:
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- workplace location or simulated workplace
- materials and equipment relevant to stress-grading softwood
- specifications and work instructions.

Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of the FPI05 Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning 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.