



Australian Government

Department of Education, Employment and Workplace Relations

FPICOT2222B Produce laminated beams

Release: 1

FPICOT2222B Produce laminated beams

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to prepare and cut boards for beam production. It includes the work involved in laying up and clamping beams, and joining timber components

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 FPICOT2222A Produce laminated beams

Application of the Unit

Application of the unit

The unit involves producing laminated beams 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 assembly	1.1. Applicable occupational health and safety (OHS), environmental, legislative and organisational requirements relevant to producing laminated beams are followed 1.2. Work order and construction plans are reviewed and clarified with appropriate personnel 1.3. Type and quantity of timber and glue to be used in assembly are collected 1.4. Equipment is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer recommendations 1.5. Assembly jigs required for production are specified and prepared 1.6. Communication with others is established and maintained in line with OHS requirements
2. Cut boards for beams	2.1. Pre-startup checks are carried out on equipment in line with site requirements 2.2. Condition of boards is visually assessed and moisture content checked 2.3. Boards are straight or scarf cut, optimising quantity and eliminating faults where possible 2.4. Cut boards are segregated in line with length and marked in line with site requirements 2.5. Defective components are rejected and disposed of in line with site procedures and environmental requirements 2.6. Assembly jigs are stored for further use or disposed of in line with site procedures and environmental requirements
3. Assemble beams	3.1. Timber components are selected from pre-cut material in line with cutting list and beam design 3.2. Glue is mixed to site requirements using manufacturer recommended glue-handling techniques 3.3. Glue spreader is set to apply even coating to components and glue line is applied with minimal wastage in line with standard operating procedures 3.4. Components are laid in jigs ready for joining with allowable faults, joins and grain in line with construction standards and grading rules

ELEMENT**PERFORMANCE CRITERIA**

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| | 3.5. Press is started, and controls and operation are checked in line with standard operating procedures |
| | 3.6. Press is set with jigs and beam is positioned to the correct orientation |
| | 3.7. Load and heat are applied to the beam in line with site requirements |
| | 3.8. Beam is checked and removed from the press |
| 4. Prepare beams for despatch and report | 4.1. Finished beams are checked and labelled in line with work order |
| | 4.2. Components are removed from jigs and safely stacked in a designated location in line with work order |
| | 4.3. Finished beams are strapped , packed and labelled ready for transportation |
| | 4.4. Strapping waste is minimised and dealt with in line with site procedures, manufacturer recommendations and environmental requirements |
| | 4.5. Equipment faults are recognised and reported in line with site procedures |
| | 4.6. Records and reports are accurately completed, processed and maintained 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 use and maintain relevant tools, machinery and equipment; efficiently and safely assemble laminated beams
- Communication skills sufficient to use appropriate 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 for producing laminated beams; review and identify work requirements
- Numeracy skills sufficient to measure, estimate and calculate time required to complete a task

REQUIRED SKILLS AND KNOWLEDGE

- 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 producing laminated beams
- 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 producing laminated beams
- Environmental risks and hazards
- Using energy effectively and efficiently
- Criteria for recycling and re-using material with defective components/assembly jigs no longer required
- Types of laminated beams and their use and defects
- Procedures for assembly sequences and jigs
- Assembly componentry and construction standards
- Industry standard cross sections and lengths
- 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 safely and efficiently produce laminated beams 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 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 producing laminated beams
- following organisational policies and procedures relevant to producing laminated beams
- assembling laminated beams in line with work order and construction plans to meet construction standards
- stacking and strapping bundles of completed beams in line with organisational requirements and OHS regulations

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
- 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)
- Laminated beams:**
- are wide thick beams which may be straight or curved
 - are made up of many layers of timber board to provide the beam with bulk and subsequent strength to withstand building loads
- Work order** is to include:
- instructions for the assembly and despatch of timber laminated beams from the work site
- and may include:
- construction plans or drawings
 - type of product
 - size
 - quantity
 - grade
 - 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
 - stress and non-stress graded timber
 - preservative treated timber
- Glue** is to include:
- water resistant adhesives, such as epoxy resins
- Equipment** may include:
- measuring equipment
 - assembly jigs
 - docking and trimming saws
 - presses
 - marking equipment

RANGE STATEMENT

- Assembly jigs** may include:
 - strapping equipment
 - enterprise-manufactured templates that assist in the positioning of components during the assembly process
- 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
 - machinery is operating to optimum performance
- Visual assessment** is the inspection of timber to determine finish quality and faults
- Moisture content:**
 - is the amount of moisture maintained in timber after kiln drying to avoid cracking and deforming
 - in Australia, generally ranges between 10% in warmer, more humid climates to 14% in cooler climates
- Straight or scarf cutting:**
 - straight cutting is docking timber to length with a vertical cut
 - scarf cutting is docking timber at a bevel, providing a larger end grain surface for bonding
- Defective components** may include:
 - components with an unacceptable level of:
 - warp
 - wane
 - cupping
 - shakes
 - insect defects
 - knots
 - resin pockets

RANGE STATEMENT

Disposing of may include:

- recycling material with defective components/assembly jigs no longer required
- re-using material with defective components/assembly jigs no longer required
- redirecting material with defective components/assembly jigs no longer required for energy recovery

Timber components:

are the sections of timber that have been pre-cut in readiness for assembly and have been cut to follow the construction plans and cutting list

Glue spreader is to include:

- equipment that spreads glue evenly to boards being laminated

Press is to include:

- flat presses
- presses with curved templates

Stacking may include:

- preparing for transport
- categorising in common size and shape
- marking lots in line with work order and site requirements
- locating so as not to block access or passage

Strapping may include:

- securing bundles with metal or plastic strap
- tightening and tensioning using hand-held equipment to prevent slippage, without risk of strap breakage or damage to products

Dealing with may include:

- recycling strapping waste
- sending strapping waste to landfill

Equipment faults may include:

- damaged equipment components
- electrical faults

Records and reports may include:

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

and may be:

- manual
- computer-based system

RANGE STATEMENT

- other appropriate organisational system

Unit Sector(s)

Not Applicable

Competency field

Competency field Common Technical