FPIC3028A Machine material using computer numerically controlled sizing machines

Unit Descriptor
This unit specifies the outcomes required to set up, operate and maintain computer numerically controlled sizing machines used for the production of panels and components. The unit includes operator maintenance.

Pre-requisite Unit(s)
FPICOR3001A Implement SH&E policies and procedures

Application of the Unit
FPIC3028A Machine material using computer numerically controlled sizing machines

Competency Field
Forest and Forest Products

Sector
Common Technical

ELEMENT PERFORMANCE CRITERIA

Elements describe the essential outcomes of a unit of competency
Performance Criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the Required Skills and Knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

1 Prepare for machining
1.1 Applicable OH&S, legislative and organisational requirements relevant to machine material are verified and complied with
1.2 Work order is reviewed, confirmed and clarified with appropriate personnel
1.3 Type and quantity of material to be machined is acquired from the storage location
1.4 Equipment is selected appropriate to work requirements and checked for operational effectiveness in accordance with manufacturers recommendations
1.5 Material machining process is planned in accordance with site procedures
1.6 Communication with others is established and maintained in accordance with OH&S requirements

2 Set up machine
2.1 CNC program is set to job specifications
2.2 Safety equipment, including emergency stops, gauges, guards and controls are checked
2.3 Machine settings and adjustments are made in accordance with job requirements and, machine and tool manufacturers instructions
2.4 Machines and cutting mechanisms are checked for safe and effective operation
2.5 Trial runs are conducted to check machine operation, accuracy and quality of finished work

2.6 Final adjustments are made to the CNC programs and equipment in accordance with workplace procedures

3 Operate machine

3.1 Pre start-up checks are carried out on equipment in accordance with site requirements

3.2 Material is fed into machine in accordance with manufacturer’s instructions, safe handling procedures and standard workplace operating procedures

3.3 Machine is operated in accordance with its designed capacity and purpose, tooling requirements and to manufacturers recommendations

3.4 Machine operation is monitored to ensure product quality and output

3.5 Waste quantities are checked and minimised

3.6 Items that do not meet quality requirements are repaired, recycled or discarded according to workplace procedures

3.7 Machining process and equipment faults are recorded and reported to the appropriate personnel

4 Conduct operator maintenance

4.1 Equipment lock out procedures are followed in accordance with OH&S legislation and site procedures

4.2 Blades are checked for blunt or damaged condition in accordance with site procedures

4.3 Blades are removed and replaced in accordance with manufacturers recommendations

4.4 Machining area is kept clear of dust, off-cuts and debris in accordance with OH&S requirements

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills include:

- Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for machining material

- Use and maintain relevant tools, machinery and equipment

- Identify problems and equipment faults and demonstrate appropriate response procedures

- Use appropriate communication and interpersonal techniques with colleagues and others
• Accurately record and maintain information relating to machining material
• Efficiently and safely machine material
• State/Territory OH&S legislation, regulations, standards and codes of practice relevant to the full range of processes for machining material
• Organisational and site standards, requirements, policies and procedures for machining material
• Environmental protection requirements relating to the disposal of waste material
• Established communication channels and protocols
• Problem identification and resolution
• Types of tools and equipment and procedures for their safe use, operation and maintenance
• Characteristics of timber, timber products and defects
• Set up and operation of CNC equipment
• Computer programs
• Cutting patterns and sequences
• Blade condition assessment
• Industry standard cross-sections and lengths
• Storage systems and labelling
• Procedures for the recording, reporting and maintenance of workplace records and information
• Appropriate mathematical procedures for estimation and measurement

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>
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</thead>
<tbody>
<tr>
<td>How are ideas and information communicated within this competency?</td>
<td>Ideas and information, verbal and written, are communicated in simple English to confirm work requirements, convey information and requests to colleagues,</td>
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</tbody>
</table>
and report and record outcomes for machining material

<table>
<thead>
<tr>
<th>How can information be collected, analysed and organised?</th>
<th>Collect, organise, interpret and understand information required to undertake machining material</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>How are activities planned and organised?</td>
<td>Organise and conduct work task activities in the correct sequence for machining material to be completed within the designated timeframes</td>
<td>2</td>
</tr>
<tr>
<td>How is team work used within this competency?</td>
<td>Effective communication and interpersonal techniques are used with colleagues and others to maximise confidence, satisfaction and productivity during the process of machining material</td>
<td>1</td>
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<tr>
<td>How are mathematical ideas and techniques used?</td>
<td>Mathematical ideas and techniques are used to calculate time to complete tasks and to estimate tools, equipment and material requirements including measurement of material lengths and set-up of computer measurement programs</td>
<td>2</td>
</tr>
<tr>
<td>How are problem solving skills applied?</td>
<td>Establish safe and effective material machining processes which anticipate likely problems to avoid wastage and downtime</td>
<td>1</td>
</tr>
<tr>
<td>How is use of technology applied?</td>
<td>Select and use computer numerically controlled equipment to cut material</td>
<td>2</td>
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**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 in the Performance Criteria is detailed below. Add any 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.

**OH&S requirements**  
- are to be in accordance with Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures. Requirements may include but not be limited to the use of personal protective equipment and clothing, fire fighting equipment, first aid equipment, hazard and risk control and elimination of hazardous materials and substances, manual handling including lifting and carrying, and
required actions relating to forest fire

Legislative requirements

- are to be in accordance with applicable legislation from all levels of government that affect organisational operation. Requirements may include but not be limited to award and enterprise agreements, industrial relations, Australian Standards, confidentiality and privacy, OH&S, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice, duty of care, and heritage and traditional land owners issues

Organisational requirements

- may include but not be limited to 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, OH&S, 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)

Work order

- is to include instructions for the machining and despatch of timber and timber products from the work site and may include type, size, length, angle, quantity and grade

Appropriate personnel

- may include but not be limited to supervisors, suppliers, clients, colleagues and managers

Material

- may include but not be limited to native timber species, imported timber species, dressed timber, in-the-rough timber, stress and non-stress graded timber, preservative treated timber, medium density fibreboard, laminated veneer, chipboard, fibreboard and other manufactured board products, coated and/or treated timber products, beams or laminated beams

Machining

- is to include sawing operations with computer numerically controlled equipment

Storage locations

- may include but not be limited to storage racks, storage bays, bins, stacks, pallet boxes, modularised storage components, temporary stacking bays (stand, frame or ground) and may be divided into standard product classification, product designation, size, dimension, stack number, weight, grade, shelf life or stock rotation position

Equipment

- is to include CNC beam saws and may include but not be limited to CNC double end profiling machines

- is to include procedures for lock out protecting operators and co-workers from accidental injury by isolating the
machine from the power source

**Communication**
- may include verbal and non-verbal language, constructive feedback, active listening, questioning to clarify and confirm understanding, use of positive, confident and co-operative language, use of language and concepts appropriate to individual social and cultural differences, control of tone of voice and body language

**CNC program**
- is to include the computer generated program, selected by the operator (sub-programs, parametrics performance of CAM functions, downloading and storage of data), which translates into the CNC equipment operating automatically to fulfil its programmed instructions

**Machine settings**
- may include but not be limited to measurement and/or setting equipment to stops, fences, angles, depths, feeds or speeds

**Pre start-up checks**
- are conducted to ensure the equipment has been set-up correctly, blades are installed accurately and machinery operating to optimum performance

**Output**
- is to include the speed or rate at which material is machined

**Waste**
- may include but not be limited to off-cuts, shavings and sawdust

**Records and reports**
- may include but not be limited to the machining method, product type, size, inspection, grading and labelling outcomes, storage locations, quality outcomes, hazards, incidents or equipment malfunctions

**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 standard must be able to provide evidence that they can safely and efficiently machine materials within organisational requirements

**Critical aspects for assessment and evidence required to demonstrate competency in this unit**
- Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for machining material using CNC sizing machines
- Effectively communicate and work safely with others in the work area
- Efficiently machine materials using CNC equipment in accordance with the work order and within prescribed
organisational tolerances

- Effectively set computer programs for the CNC equipment to follow
- Effectively conduct operator maintenance on CNC equipment

Context of, and specific resources for assessment

- The application of 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:
  - workplace location or simulated workplace
  - materials and equipment relevant to machining material using CNC equipment
  - specifications and work instructions

Method of assessment

- Assessment must satisfy the endorsed assessment guidelines of the Forest and Forest Products Industry 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, including those listed above