



**Australian Government**

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

# **LMFGG2007C Process glass by basic machines**

**Release: 1**

## **LMFGG2007C Process glass by basic machines**

### **Modification History**

Updated format, changed glass thickness definition to 'up to maximum 8 mm thick', revised Evidence Guide. Outcome equivalent.

### **Unit Descriptor**

This unit of competency covers the skills and knowledge required to cut, shape, drill and edge annealed glass up to and including 6 mm thick, and laminated glass up to 7 mm thick by basic machines

### **Application of the Unit**

This unit covers work involving cutting, shaping, drilling and edging of glass by basic machines that require individuals to demonstrate discretion, judgement and problem solving in determining the appropriate techniques, methods and equipment to be used to process glass by basic machines. The work may be conducted individually or in a team environment.

### **Licensing/Regulatory Information**

Not applicable.

### **Pre-Requisites**

Not applicable.

### **Employability Skills Information**

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

- |   |                            |   |
|---|----------------------------|---|
| 1 | Identify work requirements | <p>1.1 Work requirements, including <b>materials</b>, types of cuts, shapes and edges, processes and quantities required, are identified from work instructions or job order in accordance with <b>workplace procedures</b></p> <p>1.2 Occupational health and safety (OHS) requirements, including <b>personal protective equipment</b>, are observed throughout the work</p> <p>1.3 <b>Tools, equipment</b> and materials are selected and checked prior to use to ensure that they are appropriate for the work, of the appropriate quality, serviceable and in a safe condition</p> <p>1.4 Cutting list and quality standards are determined and procedures for operation of <b>basic cutting machines</b> identified in accordance with workplace requirements and industry standards</p> <p>1.5 <b>Glass</b> to be cut, shaped, <b>drilled</b> or <b>edged</b> is selected using information from the work order, including type of glass, thickness, colour and dimensions</p> <p>1.6 Machines, equipment and settings required to perform the work are identified</p> |
| 2 | Prepare for work           | <p>2.1 Technique and sequence of work are planned to ensure <b>glass processing</b> is conducted in a logical order</p> <p>2.2 Procedures for monitoring quality of materials, work in progress and finished items are identified in accordance with workplace requirements and industry practice</p> <p>2.3 Suitable cutting, shaping, drilling and <b>edging machines</b> are selected</p> <p>2.4 <b>Glass processing table</b> is selected and work surface is cleared of debris and dust</p> <p>2.5 Components and controls of machines, including emergency stops and guards, are identified and tested, and appropriate action taken if not in working order</p> <p>2.6 Work area is cleared of obstructions and potential hazards</p>  |

- 2.7 Glass to be processed is located in the work area using appropriate handling techniques
  - 2.8 Glass is measured accurately to minimise waste and within specified tolerances according to enterprise standards
  - 2.9 Glass is checked for imperfections and damage prior to handling
- 3 Conduct processing operations
  - 3.1 Tools and equipment are operated and monitored in accordance with manufacturer instructions and workplace procedures to ensure correct product quality and output
  - 3.2 Glass is processed to required standard in accordance with job order, work instructions and procedures, including the performance of routine lubrication and adjustments of machines/equipment, **if required**
  - 3.3 Problems occurring during work operations are identified and reported to appropriate persons in accordance with enterprise procedures
  - 3.4 Authorised changes in working procedures are followed
  - 3.5 Completed product is inspected for quality of work and repaired, reprocessed or discarded in accordance with workplace procedures
- 4 Complete work
  - 4.1 Processed glass is labelled and stored following workplace procedures ensuring there are no projections
  - 4.2 Scraps and off-cuts are removed for disposal or recycling, as required
  - 4.3 Work area clean-up is completed following workplace procedures
  - 4.4 Equipment is cleaned and stored according to workplace requirements
  - 4.5 Tools, equipment and unused materials are removed and stored appropriately
  - 4.6 Workplace documentation is completed in accordance

with workplace requirements

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills include:

- collecting, organising and understanding information related to work orders, basic plans and safety procedures
- using communication skills to the level required to confirm work requirements and specifications; communicate effectively regarding work requirements with supervisors, other workers and customers; report work outcomes and problems; and to relate to people from a range of social, cultural and ethnic backgrounds, and of varying physical and mental abilities
- using literacy skills to the level required to understand information related to work orders, including common industry terminology, plans and safety procedures; prepare reports; and interpret technical information and specifications
- planning and organising activities, including the preparation and layout of the work area, and the obtaining of equipment and materials to avoid any backtracking, workflow interruptions or wastage
- working with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- using mathematical ideas and techniques to correctly complete measurements, calculate area and weight, estimate glass requirements and minimise waste
- using pre-checking and inspection techniques to anticipate processing problems, and avoid re-working and wastage
- using the limited workplace technology related to the processing of glass by basic machines, including handling aids, tools, equipment, calculators and measuring devices

### Required knowledge includes:

- the qualities and characteristics of glass, including hazards and handling requirements
- workplace safety system requirements related to glass processing by basic machines
- identification of glass processing equipment, including functions and procedures
- the set-up and operation of glass processing equipment, including procedures for reporting machine/product defects or equipment faults
- workflow requirements in relation to glass processing

## 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	Assessment processes and techniques must be culturally appropriate and appropriate to the language, literacy and numeracy capacity of the candidate and the work being performed.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Assessors must be satisfied that the candidate can competently and consistently:</p> <ul style="list-style-type: none"> <li>• interpret work orders and plan processing operations</li> <li>• identify the materials, patterns/plans, processes, machines, equipment and settings to undertake a glass cutting, drilling, shaping and/or edging task by basic machines</li> <li>• apply safe handling requirements for machines, equipment, products and materials, including use of personal protective equipment</li> <li>• apply AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass</li> <li>• set up for and prepare to process glass</li> <li>• follow work instructions, operating procedures and inspection practices to: <ul style="list-style-type: none"> <li>• minimise the risk of injury to self and others</li> <li>• prevent damage to goods, equipment and products</li> <li>• maintain required production output and product quality</li> </ul> </li> <li>• as a minimum: <ul style="list-style-type: none"> <li>• identify and use AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass</li> <li>• complete straight cuts, truncated and radius corners, circles and fan holes, and pay holes by basic cutting machine in glass up to 7 mm in annealed, and laminated glass up to 1.0 m<sup>2</sup></li> <li>• cut up to 7 mm annealed and laminated glass using a diamond saw</li> <li>• arrive, grind and polish flat, round and mitre edges on up to 7 mm annealed, and laminated glass up to 0.5 m<sup>2</sup></li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• drill holes with tungsten or diamond drill bits in up to 7 mm annealed, and laminated glass up to 0.5 m<sup>2</sup></li> <li>• calculate the cost of glass and edgework</li> <li>• work effectively with others</li> <li>• modify activities to cater for variations in workplace contexts and environment.</li> </ul>
Context of and specific resources for assessment	<p>The application of competency is to be assessed in the workplace or realistically simulated workplace.</p> <p>Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.</p> <p>Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context.</p> <p>Assessment is to comply with relevant regulatory or Australian Standards requirements.</p> <p>The following resources should be made available:</p> <ul style="list-style-type: none"> <li>• glass sheet/product up to 7 mm thick</li> <li>• processing facilities/equipment (such as basic cutting and edging machines)</li> <li>• table</li> <li>• work area</li> <li>• work orders</li> <li>• appropriate safety and personal protection equipment.</li> </ul>
Method of assessment	<p>Assessment must satisfy the endorsed Assessment Guidelines of the LMF02 Furnishing Industry Training Package.</p> <p>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.</p> <p>Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure correct interpretation and application.</p> <p>Assessment may be applied under project-related conditions (real or simulated) and require evidence of process.</p> <p>Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the</p>

	<p>particular circumstance, but is able to be transferred to other circumstances.</p> <p>Assessment may be in conjunction with assessment of other units of competency.</p>
Guidance information for assessment	



## 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.

<b><i>Materials are to include, but are not limited to:</i></b>	<ul style="list-style-type: none"> <li>• annealed and laminated glass for residential and commercial glazing and furniture applications</li> </ul>
<b><i>Workplace procedures include:</i></b>	<ul style="list-style-type: none"> <li>• machine manufacturer specifications and operational procedures</li> <li>• workplace procedures relating to the setting and operation of glass cutting, drilling and edging machines</li> <li>• work instructions, including job sheets, cutting lists and plans</li> <li>• safety standards, including personal protective equipment, OHS regulations and enterprise requirements</li> <li>• AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass</li> </ul>
<b><i>Personal protective equipment includes:</i></b>	<ul style="list-style-type: none"> <li>• that prescribed under legislation, regulation and Australian Standard policies and practices, and may include:             <ul style="list-style-type: none"> <li>• gloves</li> <li>• safety glasses</li> <li>• gauntlets</li> <li>• footwear</li> <li>• earmuffs</li> <li>• aprons and overalls</li> </ul> </li> </ul>
<b><i>Tools and equipment may include:</i></b>	<ul style="list-style-type: none"> <li>• flat felt covered cutting tables</li> <li>• tungsten wheel glass cutters</li> <li>• L-squares and straight edges</li> <li>• tape measures</li> <li>• glass handling gloves</li> <li>• safety glasses</li> <li>• gauntlets</li> <li>• aprons</li> <li>• marking pens</li> <li>• chinagraph pencils</li> <li>• templates and lubricants</li> </ul>

<b><i>Basic cutting machines may include, but are not limited to:</i></b>	<ul style="list-style-type: none"> <li>• portable diamond saw</li> <li>• circle cutters</li> <li>• speed cutters</li> </ul>
<b><i>Glass is:</i></b>	<ul style="list-style-type: none"> <li>• annealed or laminated glass less than or equal to 7 mm thick</li> </ul>
<b><i>Drilling equipment may include, but is not limited to:</i></b>	<ul style="list-style-type: none"> <li>• portable diamond drill</li> <li>• wall-mounted and free-standing diamond drill presses</li> </ul>
<b><i>Edging may include:</i></b>	<ul style="list-style-type: none"> <li>• arrising</li> <li>• flat</li> <li>• round and mitre grinding</li> <li>• round and mitre polishing and bevelling</li> </ul>
<b><i>Glass processing includes:</i></b>	<ul style="list-style-type: none"> <li>• straight cutting</li> <li>• circle cutting</li> <li>• freehand cutting</li> <li>• drilling and edging</li> </ul>
<b><i>Edging machines may include, but are not limited to:</i></b>	<ul style="list-style-type: none"> <li>• finishing or belt machines</li> <li>• diamond or pencil edgers</li> <li>• pumice or cork polishers</li> <li>• horizontal wheels</li> <li>• finger slotters and hand tools</li> </ul>
<b><i>Tables appropriate for cutting large glass sheets include:</i></b>	<ul style="list-style-type: none"> <li>• air flotation tables</li> <li>• roller castor tables or tilt tables with air flotation</li> <li>• breaker bars or roller castors</li> </ul>

## Unit Sector(s)

Glass and glazing

## Custom Content Section

Not applicable.