



**Australian Government**

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

# **LMFGG2004B Process thin glass by hand**

**Revision Number: 1**

## LMFGG2004B Process thin glass by hand

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers the competency to cut, shape, drill and edgework annealed glass up to and including 6mm thick and laminated glass up to and including 6.38mm thick.
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### Application of the Unit

<b>Application of the unit</b>	
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### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

<b>Prerequisite units</b>	Nil	

### Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify work requirements	<p>1.1. Work requirements including materials, types of cuts, shapes and edges, processes and quantities required are identified from work instructions or job order in accordance with workplace procedures</p> <p>1.2. Workplace health and safety requirements, including personal protection needs, are observed throughout the work</p> <p>1.3. Tools, equipment and materials are selected and checked prior to use to ensure that they are appropriate for the work, serviceable and in a safe condition</p> <p>1.4. Cutting list and quality standards are determined and procedures identified in accordance with workplace requirements and industry standards</p> <p>1.5. Glass to be cut, shaped and drilled 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. Sequence of work is planned to ensure processing is conducted in a logical order</p> <p>2.2. Suitable cutting, shaping, drilling, edging and lubrication methods are selected</p> <p>2.3. Glass processing table is selected and work surface is cleared of debris and dust</p> <p>2.4. Work area is cleared of obstructions and potential hazards with cullet bins located close to work area</p> <p>2.5. Glass is checked for imperfections and damage prior to handling</p> <p>2.6. Glass to be processed is located in the work area using correct manual handling procedures</p> <p>2.7. Glass is measured accurately to minimise waste and within specified tolerances according to enterprise standards</p> <p>2.8. Components and controls of machines including emergency stops and guards are identified and tested for working order</p>
3. Process glass	<p>3.1. Tools and equipment are operated and monitored in accordance with manufacturers' instructions and workplace procedures to ensure correct product quality and output</p>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
	<p>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</p> <p>3.3. Problems occurring during work operations are identified and reported to appropriate persons</p> <p>3.4. Authorised changes in working procedures are followed</p> <p>3.5. Completed product is inspected for quality of work and repaired, reprocessed or discarded in accordance with workplace procedures</p>
4. Complete	<p>4.1. Processed glass is labelled and stored following workplace procedures ensuring there are no projections</p> <p>4.2. Scraps and off-cuts are removed for disposal or recycling as required</p> <p>4.3. Work area is cleaned and rubbish disposed of as appropriate</p> <p>4.4. Workplace documentation is completed as required</p> <p>4.5. Tools, equipment and unused materials are removed and stored appropriately</p>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

- collect, organise and understand information related to work orders, basic plans, and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise 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
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to correctly complete measurements, calculate area, estimate glass requirements and minimise waste
- use pre-checking and inspection techniques to anticipate processing problems, avoid re-working and wastage
- use the limited workplace technology related to the processing

#### Required knowledge

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

## 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.

#### Critical aspects of evidence

- Interpret work orders and plan processing operations
- Identify the materials, patterns/plans, processes, machines, equipment and settings to undertake a glass processing task
- Apply AS4667 Quality requirements for cut to size and processed glass
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Set up for and prepare to process glass
- Follow work instructions, operating procedures and inspection practices to:
  - minimise the risk of injury to self and others
  - prevent damage to goods, equipment and products
  - maintain required production output and product quality
- As a minimum, demonstrate the ability to:
  - identify and use AS4677 Quality requirements for cut-to-size and processed glass
  - complete straight cuts by hand and portable diamond saws, simple shapes, truncated and radius corners, circles, fan holes, pay holes and ovals in annealed and laminated glass up to and including 6.38 mm and up to 1.0 m<sup>2</sup>
  - rough and smooth arris annealed and laminated glass up to and including 6.38 mm by hand and up to 0.5 m<sup>2</sup>
  - drill holes with portable diamond drills and tungsten spear point drills in annealed and laminated glass up to and including 6.38 mm and up to 0.5 m<sup>2</sup>
  - calculate the cost of glass and edgework
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

#### Resource implications

Glass sheet/product, processing facilities/equipment (such as cutting equipment and glass edging equipment),

<b>EVIDENCE GUIDE</b>	
	table, work area, work orders and appropriate safety and personal protection equipment.
<b>Method of assessment</b>	<p>Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts.</p> <p>Assessment should be by direct observation of tasks and questioning on underpinning knowledge.</p> <p>Assessment may be in conjunction with assessment of other relevant units of competency.</p>
<b>Context of assessment</b>	Assessment may occur on the job or in a workplace simulated facility with relevant glass processing equipment, materials, work instructions and deadlines.



## 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.

<b>Unit context</b>	<ul style="list-style-type: none"> <li>• OHS requirements may include legislation, Australian Standard and building codes, material safety management systems, hazardous substances and dangerous goods codes and local safe operating procedures</li> <li>• Work is carried out in accordance with statutory requirements, environment legislation, manual handling procedures and relevant regulations and organisation insurance requirements</li> <li>• Work requires individuals to demonstrate discretion, judgement and problem solving skills in the planning, preparation and processing of thin glass sheet</li> </ul>
<b>Thin glass is:</b>	<ul style="list-style-type: none"> <li>• annealed sheet glass less than or equal to 6mm thick. It may include mirrors.</li> <li>• laminated glass less than or equal to 6.38mm thick</li> </ul>
<b>Glass processing by hand includes:</b>	<ul style="list-style-type: none"> <li>• cutting</li> <li>• shaping</li> <li>• cutting by portable diamond saws</li> <li>• drilling and edging.</li> </ul> <p>Edging may include arising</p>
<b>Tools and equipment are to include:</b>	<ul style="list-style-type: none"> <li>• flat felt covered cutting tables</li> <li>• tungsten wheel glass cutters</li> <li>• speed cutters</li> <li>• circle cutters</li> <li>• portable diamond saws</li> <li>• L-squares and straight edges</li> <li>• tape measures</li> <li>• glass handling gloves</li> <li>• safety glasses</li> <li>• gauntlets</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• aprons</li> <li>• marking pens</li> <li>• chinagraph pencils</li> <li>• templates and lubricants</li> </ul>
<b>Tools and equipment may include:</b>	<ul style="list-style-type: none"> <li>• tables appropriate for cutting large glass sheets include mobile air floatation tables</li> <li>• roller castor tables or tilt tables with air floatation and breaker bars</li> </ul>
<b>Edging tools include but are not limited to:</b>	<ul style="list-style-type: none"> <li>• edging stones and hand arising blocks</li> </ul>
<b>Drilling equipment may include, but is not limited to:</b>	<ul style="list-style-type: none"> <li>• portable diamond drills and tungsten spear point hand drills</li> </ul>
<b>Materials are to include but are not limited to:</b>	<ul style="list-style-type: none"> <li>• annealed and laminated glass for residential and commercial glazing</li> <li>• furniture applications and mirrors</li> </ul>
<b>Personal protective equipment</b>	<p>Personal protective equipment is to include that prescribed under legislation, regulation and Australian Standard policies and practices. It may include:</p> <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>
<b>Information and procedures</b>	<ul style="list-style-type: none"> <li>• Workplace procedures relating to the use and operation of tools and equipment required for the handling and processing of glass</li> <li>• Workplace instructions, including job sheets, cutting lists, plans, drawings and designs</li> <li>• Workplace procedures relating to reporting and communications</li> <li>• Manufacturer instructions for the use of equipment and materials</li> <li>• AS4667 Quality requirements for cut to size and processed glass</li> </ul>

**Unit Sector(s)**

<b>Unit sector</b>	Glass and Glazing
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**Competency field**

<b>Competency field</b>	
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**Co-requisite units**

<b>Co-requisite units</b>		