



**Australian Government**

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

# **LMFGG3004C Process thick glass**

**Release: 1**

## **LMFGG3004C Process thick glass**

### **Modification History**

Updated format, titled changed from previous 'Process thick glass by hand', changed glass thickness definition to 'more than 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 and laminated glass, which is greater than 8 mm thick.

### **Application of the Unit**

This unit involves the planning, preparation and processing of thick glass sheet and requires individuals to demonstrate discretion, judgement and problem solving in determining the appropriate techniques, methods and equipment to be used. It may be performed 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

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| 1 | Identify work requirements | <p>1.1 Work requirements for processing <b><i>thick glass</i></b>, including <b><i>materials</i></b>, types of cuts, shapes and edges, <b><i>processes</i></b> and quantities required, are identified from work instructions <b>or job order in accordance with workplace procedures</b></p> <p>1.2 Occupational health and safety (OHS) requirements, including <b><i>personal protective equipment</i></b>, are observed throughout the work</p> <p>1.3 <b><i>Tools, equipment</i></b> and materials are selected and checked prior to use to ensure 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, <b><i>drilled</i></b> or <b><i>edged</i></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 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 <b><i>Glass processing table</i></b> 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>  |

- 2.8 Components and controls of machines, including emergency stops and guards, are identified and tested for working order
- 3 Process glass
  - 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
  - 3.3 Problems occurring during work operations are identified and reported to appropriate persons, and any authorised changes in working procedures followed
  - 3.4 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 is cleaned and rubbish disposed of, as appropriate
  - 4.4 Tools, equipment and unused materials are removed and stored appropriately
  - 4.5 Workplace documentation is completed, as required

## 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 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, estimate glass requirements and minimise waste
- using pre-checking and inspection techniques to anticipate processing problems, and avoid re-working and wastage
- using workplace technology related to the processing of glass, including handling aids, tools, equipment, calculators and measuring devices
- modifying activities to cater for variations in workplace contexts and environment

### Required knowledge includes:

- the qualities and characteristics of glass, including 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 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.

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| 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 processing task</li> <li>• apply safe handling requirements for equipment, products and materials, including use of personal protective equipment</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>• process glass to specifications</li> <li>• complete straight cuts by hand and diamond saws, simple shapes, truncated and radius corners, circles and ovals in annealed and laminated glass greater than 8 mm and up to 1.0 m<sup>2</sup></li> <li>• rough and smooth arrise annealed and laminated glass greater than 8 mm by hand and up to 0.5 m<sup>2</sup></li> <li>• drill holes with diamond drills in annealed glass greater than 8 mm and up to 0.5 m<sup>2</sup></li> <li>• calculate the cost of glass and edgework</li> </ul> </li> <li>• work effectively with others.</li> </ul> |
| 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   |

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|  | <p>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 Standard requirements.</p> <p>The following resources should be made available:</p> <ul style="list-style-type: none"><li>• glass sheet/product greater than 8 mm thick</li><li>• processing facilities/equipment, such as cutting equipment and glass edging/drilling equipment</li><li>• work table</li><li>• appropriate work area</li><li>• work orders</li><li>• appropriate safety and personal protective equipment.</li></ul> |
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| 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 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.

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| <b><i>Thick glass is:</i></b>                                | <ul style="list-style-type: none"> <li>• annealed sheet and laminated glass for residential and commercial windows and doors greater than 8 mm thick</li> <li>• structural glass</li> </ul> |
| <b><i>Materials may include, but are not limited to:</i></b> | <ul style="list-style-type: none"> <li>• table tops and shower screens</li> </ul>   |
| <b><i>Glass processing by hand includes:</i></b>             | <ul style="list-style-type: none"> <li>• cutting</li> <li>• use of portable diamond saws</li> <li>• shaping</li> <li>• drilling and edging (edging may include arising)</li> </ul>          |
| <b><i>Workplace procedures include:</i></b>                  | <ul style="list-style-type: none"> <li>• workplace procedures relating to the use and operation of tools and equipment required for the</li> </ul>  |



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|  | <p>handling and processing of glass</p> <ul style="list-style-type: none"> <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>• quality standards and procedures</li> </ul>   |
| <b><i>Personal protective equipment includes:</i></b>                  | <ul style="list-style-type: none"> <li>• that prescribed under legislation, regulations and enterprise practices and procedures, and may include: <ul style="list-style-type: none"> <li>• gloves and gauntlets</li> <li>• safety glasses and footwear</li> <li>• aprons and overalls</li> </ul> </li> </ul>  |
| <b><i>Tools and equipment may include, but are not limited to:</i></b> | <ul style="list-style-type: none"> <li>• 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> <li>• aprons</li> <li>• marking pens</li> <li>• chinagraph pencils</li> <li>• templates and lubricants</li> </ul> |
| <b><i>Drilling equipment may include, but is not limited to:</i></b>   | <ul style="list-style-type: none"> <li>• portable diamond drills</li> <li>• glass drilling machine</li> </ul>   |
| <b><i>Edging tools may include, but are not limited to:</i></b>        | <ul style="list-style-type: none"> <li>• edging stones and hand arrisers</li> <li>• upright belt</li> <li>• handheld belt machines</li> </ul>   |
| <b><i>Glass processing tables may include:</i></b>                     | <ul style="list-style-type: none"> <li>• air flotation tables</li> <li>• roller castor table or tilt table with air flotation or roller castors</li> </ul>  |

## Unit Sector(s)

Glass and glazing

## **Custom Content Section**

Not applicable.