



**Australian Government**

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

# **LMFGG3009B Set up and operate glass laminating equipment**

**Revision Number: 1**

## LMFGG3009B Set up and operate glass laminating equipment

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit addresses the knowledge and skills required to set up and operate glass laminating equipment. It includes the performance of operator maintenance.
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### Application of the Unit

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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. Prepare for work	<p>1.1. Work requirements from work instructions to ascertain:</p> <ul style="list-style-type: none"> <li>1.1.1. material to be used</li> <li>1.1.2. process required to complete work tasks</li> <li>1.1.3. the type, thickness and colour of the interlayer</li> <li>1.1.4. number of sheets to be laminated and holding area for completed items</li> <li>1.1.5. the correct machine heat and pressure settings for the materials that are being used</li> </ul> <p>1.2. Workplace health and safety requirements relevant to operating glass laminating equipment including personal protection needs, are observed throughout the work</p> <p>1.3. Work sequence is planned in a logical order to suit the job</p> <p>1.4. Tools, equipment and materials are selected and checked prior to use to ensure that they are appropriate for the work, of the required quality, serviceable and in a safe condition</p> <p>1.5. Machines, cutting tools and jigs are identified and checked for safe and effective operation, including emergency stops, gauges, guards and controls</p> <p>1.6. Procedures are identified for checking:</p> <ul style="list-style-type: none"> <li>1.6.1. quality of materials and items produced</li> <li>1.6.2. working condition of equipment</li> <li>1.6.3. quality requirements for each stage of the laminating process</li> </ul> <p>1.7. Communication with others involved with the work is established and maintained to ensure efficient workflow coordination, personnel cooperation and safety throughout the application of this competency</p>
2. Set up equipment	<p>2.1. Machine settings and adjustments are made in accordance with job requirements and machine and tool manufacturer instructions</p> <p>2.2. Trial runs are conducted to check machine operation, accuracy and quality of finished work</p> <p>2.3. Necessary adjustments are made to machine settings</p>
3. Conduct glass laminating	<p>3.1. Glass to be laminated is prepared for the process in accordance with workplace procedures or industry</p>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
operations	<p>practice</p> <p>3.2. Start-up and shutdown procedures for equipment used in the laminating process are completed in accordance with manufacturer instructions or workplace procedures</p> <p>3.3. Glass flopping and washing procedures are conducted in accordance with manufacturer instructions or workplace procedures</p> <p>3.4. Whiteroom procedures are conducted in accordance with manufacturer instructions or workplace procedures</p> <p>3.5. Whiteroom hoist is operated in accordance with manufacturer instructions or workplace procedures</p> <p>3.6. Pre-press oven and glass stacker are operated in accordance with manufacturer instructions or workplace procedures to recognised industry standards</p> <p>3.7. Air lifter is operated in accordance with manufacturer instructions or workplace procedures</p> <p>3.8. Autoclave is loaded, operated and unloaded in accordance with manufacturer instructions or workplace procedures</p> <p>3.9. Cutting table is operated to cut glass to required size (if applicable) in accordance with manufacturer instructions or workplace procedures</p> <p>3.10. FMF is operated in accordance with manufacturer instructions or workplace procedures</p>
4. Complete work and maintain equipment	<p>4.1. Product is inspected for quality of work and items which do not meet quality requirements discarded or returned for reprocessing in accordance with workplace procedures</p> <p>4.2. Completed work is placed in holding area in accordance with workplace procedures</p> <p>4.3. Work area is cleaned and rubbish disposed of as appropriate</p> <p>4.4. Equipment is cleaned and inspected for serviceability in accordance with workplace procedures</p> <p>4.5. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures</p> <p>4.6. Equipment and tooling is maintained in accordance with workplace procedures</p> <p>4.7. Workplace documentation is completed in</p>

ELEMENT	PERFORMANCE CRITERIA
	<p>accordance with workplace requirements</p> <p>4.8. 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 work 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 back tracking, 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 work requirements, optimise glass sizes for handling and processing and assemble required materials
- use pre-checking and inspection techniques to plan work, avoiding re-working and wastage
- use the workplace technology related to the operation of glass laminating equipment

#### Required knowledge

- procedures for the set up, operation and operator maintenance of glass laminating equipment
- workflow relating to the operation of glass laminating equipment.
- characteristics of materials used and uses of products produced in the glass laminating process
- workplace procedures for the reporting of material, product or equipment faults
- workplace safety system requirements related to the operation of glass laminating equipment

## 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 order/job instruction and locate and apply relevant information to operate glass laminating equipment
- Plan the conduct of glass laminating operations
- Set up, operate, monitor and perform operator maintenance of glass laminating equipment
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- 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 demonstrate glass flopping and washing operation and procedures
  - identify and demonstrate the white room operation and procedures
  - safely load glass into the pre-press oven and stacker
  - operate the pre-press oven and stacker during the glass laminating process
  - operate an air lifter
  - operate an autoclave
  - safely complete the requirements of the packing area
  - operate a laminating cutting table
  - carry out post laminating procedures
  - perform testing, classification and marking of toughened glass in accordance with AS/NZS 2208 Safety glazing materials
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

<b>EVIDENCE GUIDE</b>	
<b>Resource implications</b>	Glass laminating equipment, workplace operating procedures, unprocessed materials, personal protective equipment and an appropriate work area.
<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 laminating 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.

#### Unit context

- This unit covers work involving the set up, operation and monitoring of glass laminating equipment
- Work requires individuals to demonstrate discretion, judgement and problem solving skills in the set up and operation of glass laminating machines
- Work is carried out in accordance with statutory requirements, environment legislation, manual handling procedures and relevant regulations and organisation insurance requirements
- OHS requirements may include legislation, standards, building codes, material safety management systems and local safe operating procedures
- Work is generally performed individually, with general supervision and may be part of a production process

#### Glass laminating equipment

- Glass laminating equipment includes that equipment and machines involved in the process of laminating glass. This involves the insertion of an intermediary layer between two layers of glass
- Laminated glass includes:
  - safety
  - automotive
  - bullet and bandit resistant
  - patterned laminated glass

#### Tools and equipment are to include:

- glass flopping and washing machines
- white room
- hoist
- pre-press oven
- glass stacker

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• air lifter</li> <li>• autoclave</li> <li>• packing equipment</li> <li>• cutting machine</li> <li>• FMF machine</li> <li>• standards stamping equipment (including stamp)</li> </ul>
<b>Materials are to include but are not limited to:</b>	<ul style="list-style-type: none"> <li>• annealed float</li> <li>• sheet and patterned glass</li> </ul>
<b>Personal protective equipment</b>	<p>Personal protective equipment is to include that prescribed under legislation, regulation and enterprise policies and practices. It may include:</p> <ul style="list-style-type: none"> <li>• gauntlets</li> <li>• gloves</li> <li>• safety glasses</li> <li>• hard hats</li> <li>• safety footwear</li> <li>• aprons and overalls</li> </ul>
<b>Information and procedures</b>	<ul style="list-style-type: none"> <li>• Workplace procedures relating to the setting up and operation of glass laminating machinery</li> <li>• Machine manufacturers' specifications and operational procedures</li> <li>• Workplace procedures relating to the handling and movement of glass</li> <li>• Work instructions including job sheets, cutting lists, plans, drawings and designs</li> <li>• Safety standards include personal protective equipment, OHS regulations and enterprise requirements</li> <li>• AS/NZS2208 Safety glazing material</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>		