



Australian Government

Department of Education, Employment and Workplace Relations

LMFGG3005B Process glass by semi-automatic and automatic machines

Revision Number: 1

LMFGG3005B Process glass by semi-automatic and automatic machines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit addresses the knowledge and skills required to cut, drill, shape and edge glass by semi-automatic and automatic glass processing equipment.
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Application of the Unit

Application of the unit	
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	Nil	

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify work requirements	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 1.2. Workplace health and safety requirements, including personal protection needs, are observed throughout the work 1.3. Tools, equipment 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 1.4. Cutting list and quality standards are determined and procedures identified in accordance with workplace requirements and industry standards 1.5. Glass to be cut, shaped, drilled or edged is selected using information from the work order including: type of glass, thickness, colour and dimensions 1.6. Machines, equipment and settings required to perform the work are identified 1.7. Information required to be entered into machine to match work requirements or job order is identified and calculated
2. Prepare for work	2.1. Technique and sequence of work is planned to ensure processing is conducted in a logical order 2.2. Procedures for monitoring quality of materials, work in progress and finished items are identified in accordance with workplace requirements and industry practice 2.3. Tools, equipment and attachments required for the work are assembled and checked for good working order 2.4. Components and controls of machines including emergency stops and guards are identified and tested for working order 2.5. Information required by machine for required process is entered 2.6. Work area is cleared of obstructions and potential hazards 2.7. Glass to be processed is located in the work area using appropriate handling techniques 2.8. Glass to be processed is checked for imperfections

ELEMENT	PERFORMANCE CRITERIA
	and damage
3. Conduct processing operations	3.1. Tools and equipment are operated and monitored in accordance with manufacturers' 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 in accordance with enterprise procedures 3.4. Waste quantities are checked to ensure that they are within allowable limits 3.5. Authorised changes in working procedures are followed 3.6. 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. Workplace documentation is completed in accordance with workplace requirements 4.6. Tools, equipment and unused materials are removed and stored appropriately

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 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 area and weight, estimate glass requirements and minimise waste
- use pre-checking and inspection techniques to anticipate processing problems, avoid re-working and wastage
- use the developing workplace technology related to the processing of glass by semi-automatic and automatic machines including computers, handling aids, tools and equipment

Required knowledge

- the qualities and characteristics of glass, including the hazards and handling requirements
- workplace safety system requirements related to glass processing by semi-automatic and automatic machines
- identification of semi-automatic and automatic glass processing machines, including their functions and procedures
- the set up and operation of semi-automatic and automatic glass processing machines including procedures for reporting machine/product defects or equipment faults
- 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 cutting, drilling, shaping and/or edging task with semi-automatic or automatic machines
- Apply safe handling requirements for machines, 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:
 - process and upload computerized cutting data from optimisation software programs
 - load and position stock sheets onto semi-automatic and automatic cutting tables
 - perform pre-cutting tool and machinery checks
 - cut given dimensions from stock sheets with minimal wastage/off-cuts
 - cut shapes from optimisation data
 - remove, pack and store cut glass including labelling for despatch
 - calculate the cost of glass and edgework
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

Resource Implications

Semi-automatic, automatic or computerised glass processing equipment, optimisation software programs, work area, standard operating procedures, work orders, unprocessed materials and appropriate safety and personal protection equipment.

EVIDENCE GUIDE	
Method of Assessment	Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts. Assessment should be by direct observation of tasks and questioning on underpinning knowledge. Assessment may be in conjunction with assessment of other relevant units of competency.
Context of Assessment	Assessment may occur on the job or in a workplace simulated facility with relevant process 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 cutting, shaping, drilling and/or edging of glass by semi-automatic and automatic machines • Work requires individuals to demonstrate discretion, judgement and problem solving skills in determining the appropriate techniques, methods and equipment to be used to process glass by basic machines. This may be demonstrated either individually or in a team environment • OHS requirements may include legislation, building codes, quality standards, material safety management systems, hazardous substance and dangerous goods codes and local safe operating procedures • Work is carried out in accordance with statutory requirements, environment legislation, manual handling procedures and relevant regulations and organisation insurance requirements
Glass	Glass may be annealed or laminated. It may include but is not limited to: • float glass and coated glass
Glass processing includes:	• cutting • shaping • drilling and edging
Cutting may include but is not limited to:	• straight line cutting • shape cutting • circle and oval cutting.
Edging may include:	• arrising • flat and mitre grinding • polishing and bevelling
Semi-automatic and automatic	• semi-automatic, automatic and computerised cutting shaping and edging machines.

RANGE STATEMENT	
machines include but are not limited to:	Machines may be manual or computer-navigated.
Information requirements of computerised machines, (CNC) may include but are not limited to:	• glass thickness • size • type • stock sheet size • off-cut sizes • print-out information or spreadsheets
Tools and equipment are to include:	• flat felt covered cutting tables • gloves • safety glasses • marking pens • chinagraph pencils • templates and lubricants
Tables appropriate for cutting large glass sheets include:	• air flotation tables • roller castor table or tilt table with air flotation or roller castors
Edging equipment includes but is not limited to:	• semi-automatic and computer-navigated straight line and variable angle edgers • straight line and shape edgers • bevellers and brilliant cutters
Glass cutting equipment includes but is not limited to:	• semi-automatic and computer-navigated straight line annealed and laminated glass cutters • shape cutters • laser glass cutters • diamond saws and water-jet cutters
Materials are to include but are not limited to:	• annealed and laminated glass for residential and commercial windows and doors • architectural glazing • mirrors and furniture applications
Personal protective equipment	Personal protective equipment is to include that prescribed under legislation, regulation and enterprise policies and practices. It may include: • gloves • gauntlets • safety glasses • footwear • aprons/overalls

RANGE STATEMENT**Information and procedures**

- Machine manufacturer specifications, operational and maintenance procedures
- Workplace procedures relating to the setting and operation of computerised glass cutting, shaping, drilling and edging machines
- Work instructions, including job sheets, cutting lists and plans
- Safety standards include personal protective equipment, OHS regulations and enterprise requirements
- AS4667 Quality requirements for cut to size and process glass

Unit Sector(s)**Unit sector**

Glass and Glazing

Competency field**Competency field****Co-requisite units**

Co-requisite units		