



Australian Government

Department of Education, Employment and Workplace Relations

LMFGG3017B Fabricate and install commercial glazing

Revision Number: 1

LMFGG3017B Fabricate and install commercial glazing

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit addresses the knowledge and skills required to plan, fabricate and install glass in commercial shopfronts, doors and windows.
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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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify work requirements	1.1. Work requirements in the form of type of glass, frames and the method of fixing are identified from work instructions 1.2. Workplace health and safety requirements for fabrication and installation of commercial glazing, including personal protection needs, are identified and observed throughout the work 1.3. The process for fabricating and installing commercial glazing is identified
2. Prepare for work	2.1. Work sequence is planned in a logical order to suit the job 2.2. Tools, equipment and materials, other than glass and frames, are selected and checked prior to use to ensure that they are appropriate for the work, serviceable and in a safe condition 2.3. Type of glass to be fitted and frames is selected to match: <ul style="list-style-type: none"> 2.3.1. customer order 2.3.2. requirements for security, noise or light control 2.3.3. Australian Standards 2.4. Glass is checked for type, size and imperfections 2.5. Glass fixing method is selected according to: <ul style="list-style-type: none"> 2.5.1. specification 2.5.2. type of glass and frame 2.5.3. security requirements 2.5.4. sealing methods 2.5.5. Australian Standards
3. Identify site conditions and restraints	3.1. Site safety hazards are recognised and corrective action taken to reduce injury to self and others 3.2. Other on-site difficulties are identified and action taken to resolve in accordance with regulations and enterprise agreements 3.3. Special characteristics of the glass aperture are identified in relation to the effect of the glass fitting process on the finished job 3.4. Covering material is applied where necessary to protect existing fixtures and fittings
4. Prepare frame	4.1. Frame condition is assessed to ensure suitability for

ELEMENT	PERFORMANCE CRITERIA
	<p>glazing in accordance with customer order and Australian Standards</p> <p>4.2. Defective frames are reported for repair or replacement in accordance with workplace procedures</p> <p>4.3. Frame is prepared (if required) to receive glass by:</p> <p>4.3.1. cleaning</p> <p>4.3.2. surface preparation (if required)</p> <p>4.3.3. checking size against specification</p> <p>4.4. Fixing and sealing materials are prepared by mixing or cutting to length as appropriate</p>
5. Fit glass	<p>5.1. Glass is fixed to the frame using the selected method and in accordance with recognised Australian and industry standards</p> <p>5.2. Solvents and sealants are used in accordance with manufacturer recommendations and Australian Standards</p> <p>5.3. Excess sealing material is removed</p> <p>5.4. Glass and frame are cleaned after fixing</p>
6. Complete work	<p>6.1. Completed installation is checked to ensure compliance with customer requirements, specifications and Australian Standards</p> <p>6.2. Workplace documentation is completed in accordance with workplace requirements</p> <p>6.3. Work area is cleaned and left in a safe condition and rubbish removed from work area and disposed of in accordance with relevant statutory requirements and workplace requirements</p> <p>6.4. Tools, equipment and materials are cleaned and stored following workplace procedures</p> <p>6.5. Waste and scrap material is removed for disposal or recycling as required</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 economical cutting and assemble required materials
- use pre-checking and inspection techniques to plan work, avoiding re-working and wastage
- use the limited workplace technology related to the fabrication and installation of commercial glazing

Required knowledge

- the types, qualities and characteristics of glass, including the hazards and handling requirements
- the techniques, methods, materials and process of fabricating and installing commercial glazing
- workflow in relation to the fabrication and installation of commercial glazing
- relevant Australian Standards
- the application and operation of tools and equipment used
- identification of equipment, processes and procedures
- workplace safety system requirements related to the fabrication and installation of commercial glazing

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 fabricate and install commercial glazing
- 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
- To complete a minimum of:
 - measuring for the installation of commercial windows, shopfronts and doors
 - work from product specification data sheets and specified software programs
 - identify and select product materials in relation to wind loading requirements.
 - fabricate frame and sash components including cutting, tooling/milling, routing, drilling and crimping
 - identify, select and install component hardware, including weather seals, wheels, stays, hinges and COC pivots, guides and locks
 - select and cut glass to AS1288 and AS4667
 - assemble frames, including glass, gaskets, tapes, sealants, adhesives, fasteners in accordance with AS2047
 - install commercial windows, framed and frameless shop fronts and returns, supporting fins and doors
 - calculate the cost of commercial windows, shopfronts and doors
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

EVIDENCE GUIDE	
Resource implications	Frames, glass, fixing material, sealants, workplace operating procedures and work orders, personal protective equipment and an appropriate work area/site.
Method of assessment	<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>
Context of assessment	Assessment may occur on the job or in a workplace simulated facility with relevant fabrication and installation 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

- Work requires individuals to demonstrate discretion, judgement and problem solving skills in the planning and fitting of glass in commercial applications
- 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

Commercial fabrication and glazing

Commercial fabrication and glazing covers work involving the fabrication, assembly, glazing and installation of framed and frameless shop fronts and returns, fixed and operable windows, hinged, pivot, sliding and automatic doors. It may include:

- toughened glass assemblies
- aluminium glazing systems, including planar assemblies, curtain wall systems, spider assemblies, panel wall systems (hung and stacked)
- Armourview balustrading
- watertight glazing techniques, including use of silicone

Tools and equipment may include:

- assembly benches
- drop and up-cut saws
- pneumatic
- hydraulic and manual presses
- frame and sash tooling
- copy routers
- end millers
- crimpers

RANGE STATEMENT	
	<ul style="list-style-type: none"> • electric and pneumatic powered drills and screwdrivers • pop rivet guns • glue guns and general hand tools
Materials are to include but are not limited to:	<ul style="list-style-type: none"> • all forms of flat glass and acrylic glazing products • plastic • aluminium • steel • solid timber • gaskets • sealants and adhesives
Types of glass may include but are not limited to:	<ul style="list-style-type: none"> • annealed glass • toughened glass • laminated glass • bandit resistant glass • bullet resistant glass and heat reflective glass
Methods of glazing may include:	<ul style="list-style-type: none"> • pocket • flush • channel • and double glazing
Personal protective equipment	<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"> • gauntlets • gloves • safety glasses • hard hats • safety footwear • aprons and overalls
Information and procedures	<ul style="list-style-type: none"> • Workplace procedures relating to fitting of glass for commercial applications • On-site procedures and regulations relating to the handling and movement of glass • Work instructions including job sheets, cutting lists, plans, patterns, templates, drawings and/or designs • Safety standards, include personal protective equipment, OHS regulations and enterprise requirements

RANGE STATEMENT

	<ul style="list-style-type: none"> • Australian Standards: <ul style="list-style-type: none"> • AS1228 Glass in buildings, selection and installation • AS4667 Quality requirements for cut size and processed glass • AS2047 Windows in buildings, selection and installation • AS2208 Safety glazing materials in buildings • AS2343 Bullet resistant panels and elements • AS3555 Intruder resistant building panels
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Unit Sector(s)

Unit sector	Glass and Glazing
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		