

<b>Title</b>	<b>Apply knowledge of technical processes and methods to produce glass items</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>15</b>

<b>Purpose</b>	People credited with this standard are able to apply knowledge of: tools and equipment, and materials and their handling for glass processing; and production methods used to produce glass items. People can also maintain tools and equipment used for glass processing.
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<b>Classification</b>	Glass and Glazing > Glass Processing and Manufacturing
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<b>Available grade</b>	Achieved
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## Guidance Information

- 1 Legislation, guidelines, and standards relevant to this unit standard include:  
[Health and Safety at Work Act 2015](#);  
[Building Act 2004](#);  
*Safe Use of Machinery: Best Practice Guidelines*; available at [www.worksafe.govt.nz](http://www.worksafe.govt.nz);  
SNZ TS 4211: 2022, *Specification for performance of windows*;  
AS/NZS 2208:1996, *Safety glazing materials in buildings*;  
AS/NZS 4667:2000, *Quality requirements for cut-to-size and processed glass*;  
AS/NZS 4668:2000, *Glossary of terms used in the glass and glazing industry*;  
available at <http://www.standards.co.nz>.

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes.

- 2 Definitions  
*Daily maintenance* refers to lubricating adjustments or fences, cleaning, identifying problems, and attending to damage, wear and tear, unusual noises and electrical problems.  
*Equipment* refers to glass processing equipment such as power cords, air lines, clamps, drill presses, Linishers, bandsaws, and washing plants.  
*Job specifications* refer to the scope of the project, task, or work being undertaken. They include the objectives, quality requirements, deliverables, timeline, and budget.  
*Tools* refer to both powered and non-powered hand-held tools such as rulers, verniers, measuring tape, glass cutters, running pliers, squares, grinders, drills, routers, and bevellers.

*Workplace procedures* refer to documented procedures specific to a workplace that set out the standard and required practices of that workplace. These may include job specifications, procedures, practices, manufacturer recommendations, technical data sheets, and material safety data sheets.

### 3 Assessment

Evidence for this unit standard must reflect:

- industrial standards, current health, safety, industry, and workplace procedures;
- job specifications and customer requirements;
- industry requirements for commercially acceptable timeframes.

Power connection maintenance refers to visual inspection and safe use, as only registered electricians can undertake repairs.

### 4 Range

This unit concerns float glass and other commonly processed glass materials used in processing glass items; it does not include insulated, toughened and heat-strengthened, screen-printed, and laminated glass items covered in other units.

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## Outcomes and performance criteria

### Outcome 1

Apply knowledge of tools and equipment used for glass processing.

#### Performance criteria

- 1.1 Types of tools and equipment used in the plant and their usage for glass processing are described.
- Range may include – tools, equipment and machinery.
- 1.2 Setup of tools and equipment is described.
- 1.3 Health and safety requirements for the safe use of tools and equipment are identified and described.
- 1.4 Appropriate tools and equipment for the intended task are selected, set up, and safely used.

### Outcome 2

Maintain tools and equipment for glass processing.

#### Performance criteria

- 2.1 Tools and equipment required for glass processing are checked before use, and unsafe or faulty tools and equipment are reported.
- 2.2 Preventative maintenance is undertaken in accordance with manufacturer's specifications and in safe working conditions.

2.3 Power connections and safety features are maintained in accordance with the manufacturer's specifications.

2.4 Tools and equipment are cleaned and stored.

Range includes – instigating decommissioning and reporting faulty equipment to the supervisor for tagging and locking out.

### Outcome 3

Apply knowledge of glass materials and their handling used in glass processing.

#### Performance criteria

3.1 Different types and properties of glass materials are identified and described.

Range glass materials may include but are not limited to – float, reflective, extra clean, chromatic, tinted, smart, and recycling of glass.

3.2 Compliance requirements for glass products are explained

Range may include but is not limited to – moisture control, wind and thermal loading, and glass size in relation to thickness.

3.3 Stored and processed glass materials are inspected for defects to verify that they meet quality standards.

3.4 Proper storage techniques for glass materials to prevent damage are demonstrated.

Range may include but is not limited to – considerations for stacking, climate control, low-emission glass shelf life and protection from environmental factors.

3.5 Safety procedures for handling glass materials are demonstrated to prevent breakage, injury, and contamination.

3.6 Glass materials are securely packaged for safe transportation, considering factors such as shock resistance and protection from breakage during transit.

### Outcome 4

Apply knowledge of production methods used to produce glass items.

**Performance criteria**

4.1 Different types of production methods for producing glass items are described.

Range includes – industry standards, compliance requirements, third-party certification, quality assurance requirements, tool and equipment requirements, techniques and finishes, packaging requirements, timing requirements

4.2 Tools and equipment are selected as per specified production methods to cut glass accurately with minimal wastage.

Range may include but is not limited to – handheld cutters, diamond scribes, cutting saws, slide rail cutters, Computer Numerical Control (CNC) cutters, lasers, and water jets.

4.3 Techniques and finishes are selected as per specified production methods to process glass accurately with minimal wastage.

Range may include but is not limited to – drilling, routing, bevelling, etching, printing laminating with interlaying.

4.4 Techniques and methods are selected as per specified production methods for packing glass ready for safe transportation, including labelling and documentation.

Range may include but is not limited to – cases, crates, endcaps, stillages, pallets, containers.

4.5 Production challenges are identified and corrective actions applied to reduce disruptions to production and maintain quality standards.

Range may include but is not limited to – breakdowns, mistakes, defects in glass, damaged glass, and falling behind deadlines.

<b>Planned review date</b>	31 December 2029
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	24 October 2024	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0073
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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**Comments on this unit standard**

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council [qualifications@hangaarorau.nz](mailto:qualifications@hangaarorau.nz) if you wish to suggest changes to the content of this unit standard.