

Title	Manufacture toughened and heat strengthened glass		
Level	4	Credits	10

Purpose	<p>This unit standard is for experienced people in the glass processing industry working with specialist glass.</p> <p>People credited with this unit standard are able to prepare to manufacture toughened and heat strengthened glass, and use horizontal glass tempering machines to manufacture toughened and heat strengthened glass.</p>
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Classification	Glass and Glazing > Glass Processing and Manufacturing
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Available grade	Achieved
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Guidance Information

1 Definition

Worksite requirements – refer to instructions to staff on policy and procedures which are documented in memo or manual format and are available in the workplace. These requirements include – company specifications and procedures, work instructions, manufacturer’s specifications, product quality specifications, legislative requirements.

2 Legislation and standards relevant to this unit standard include – the Health and Safety at Work Act 2015, Resource Management Act 1991 and the following Australia/New Zealand Standards:

AS/NZS 2208:1996 *Safety glazing materials in buildings*

AS/NZS 2080:2006 *Safety glazing for land vehicles*, available at

<http://www.standards.co.nz>.

3 Range

Types of glass which can be manufactured by the processes covered in this unit standard are limited to – float glass from 4 mm to 19 mm in thickness, obscure glass with shallow patterns.

Outcomes and performance criteria

Outcome 1

Prepare to manufacture toughened and heat strengthened glass.

Performance criteria

- 1.1 Preparation of work area and personal safety precautions are carried out in accordance with worksite requirements.
- Range preparation includes – selection and use of protective clothing and safety equipment, identification of hazards, checks of emergency stops and battery drives on machine, review of operational procedures, clearing work area.
- 1.2 Glass to be manufactured is checked in accordance with worksite requirements.
- Range checks include – glass and processing system to be used match with requirements of work or customer order; completion of relevant standard tests; glass size is within processing equipment limitations; glass manufacturer's size and processing limitations; printing face, shapes and patterns for printing table placement.
- 1.3 Glass is prepared for manufacturing in accordance with worksite requirements.
- Range preparation includes – marking of glass with standards identification in accordance with work or customer order, selection and positioning of glass on loading table, inputting of machine settings for type of glass being toughened.

Outcome 2

Use horizontal glass tempering machines to manufacture toughened and heat strengthened glass.

Performance criteria

- 2.1 Pre-start, start, and set-up procedures are carried out in accordance with machine and worksite requirements.
- 2.2 Glass is forwarded into the furnace in accordance with worksite requirements.
- 2.3 Furnace operation is monitored and adjustments are made in accordance with worksite requirements.
- 2.4 Emergency procedures are applied if glass breakage occurs in the furnace in accordance with worksite requirements.
- 2.5 Manufactured glass is checked, and standard tests are completed and recorded in accordance with worksite requirements.
- 2.6 Glass is labelled and unloaded from unloading table in accordance with worksite requirements.
- 2.7 Post-processing clean up is completed in accordance with worksite requirements.

Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 April 2004	31 December 2013
Review	2	21 May 2010	31 December 2017
Review	3	18 June 2015	N/A
Rollover and Revision	4	25 August 2022	N/A

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

Comments on this unit standard

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