

Title	Fabricate three-dimensional signs		
Level	4	Credits	30

Purpose	<p>This unit standard is for people working in the signmaking industry wishing to specialise in the fabrication of three-dimensional signs.</p> <p>People credited with this unit standard are able to fabricate: a three-dimensional channel letter; a sign pan; a sign case for an illuminated sign; and a three-dimensional sign or display.</p>
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Classification	Sign Making > Sign Making - Specialisation
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Available grade	Achieved
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Guidance Information

- 1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:
Health and Safety at Work Act 2015;
NZS 3640:2003, *Chemical preservation of round and sawn timber*.

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, pending review of this unit standard.

- 2 Definitions
- CNC** – refers to Computer Numeric Control systems.
- Job requirements** – refer to specific requirements for the signmaking job at hand. These requirements may or may not be covered in the workplace job documentation and may include special instructions or quality requirements expected by the customer and the production standards of the signmaking workplace or organisation.
- Manufacturer's instructions** – instructions provided by manufacturers of substances, equipment, and machinery. These instructions may include details on safe and correct handling, use and storage of substances and/or details on substance properties. Examples are labels on substance containers, product data sheets, and operator's manuals.
- Service information** – refers to the recommended use and maintenance of machinery, tools and equipment.

Workplace procedures – refer to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace, and are consistent with manufacturer’s requirements. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor’s instructions, and procedures to comply with legislative and local body requirements relevant to the signmaking sector.

- 3 Range
Substrate materials may include but are not limited to – acrylic, Aluminium Composite Material (ACM), aluminium, Medium Density Fibreboard (MDF), plywood.
- 4 It is recommended that people hold credits in Unit 30161, *Demonstrate knowledge of films, print media, rigid materials, paints and printing inks used in signmaking*, before being assessed against this unit standard.
- 5 Assessment information
Three-dimensional sign and sign components must be fabricated according to job requirements.

Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, workplace procedures and legislative requirements.

Outcomes and performance criteria

Outcome 1

Fabricate a three-dimensional channel letter.

Performance criteria

- 1.1 Measure and mark substrate material to meet sign component dimensions.
- 1.2 Use power tools for cutting substrate material.

Range tools may include but are not limited to – handheld circular saw, jig saw, table saw, bandsaw, copy router; evidence is required for three power tools.
- 1.3 Cut and engrave substrate material using machinery available in the workplace.

Range machinery may include but are not limited to – CNC router, CNC engraver, laser cutter.
- 1.4 Sharpen drill bit and use to drill substrate material.

Range drill bit sharpening angles and set, drill speed selected.

- 1.5 Finish and polish sign edges.
Range mechanical methods, flame methods.
- 1.6 Bend and fold substrate material using heat bars and heat guns.
- 1.7 Bond substrate material using solvent-based glues.
- 1.8 Fabricate a three-dimensional channel letter.

Outcome 2

Fabricate a sign pan.

Performance criteria

- 2.1 Measure and mark substrate to meet sign component dimensions.
- 2.2 Use power tools for cutting substrate material.
Range tools may include but are not limited to – handheld circular saw, jig saw, table saw, bandsaw, copy router;
evidence is required for use of three power tools.
- 2.3 Cut substrate material using machinery available in the workplace.
Range may include but is not limited to – CNC systems.
- 2.4 Fold substrate material using the v-groove folding method.
Range circular saw, handheld router, CNC router.
- 2.5 Weld substrate material folds using welding in the v-groove.
- 2.6 Join substrate material using a range of methods.
Range blind rivets, glues, very high bond (VHB) tapes.
- 2.7 Fabricate a sign pan.

Outcome 3

Fabricate a sign case for an illuminated sign.

Performance criteria

- 3.1 Measure and mark substrate, and cut to meet sign component dimensions.
- 3.2 Join components using a range of methods.
Range blind rivets, screws, VHB tapes.

3.3 Fabricate a sign case for an illuminated sign.

Outcome 4

Fabricate a three-dimensional sign or display.

Performance criteria

4.1 Measure and cut substrate materials to meet sign component dimensions.

4.2 Select and use appropriate tools, machinery and methods to join components to meet job requirements.

Range tools may include but are not limited to – handheld circular saw, jig saw, table saw, bandsaw, copy router, drill, heat gun;
machinery may include but is not limited to – CNC router, CNC engraver, laser cutter;
joining methods may include but are not limited to – blind rivets, screws, glues, very high bond (VHB) tapes.

4.3 Fabricate a three-dimensional sign or display.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	29 September 2022	N/A

Consent and Moderation Requirements (CMR) reference	0013
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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 the Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.