

Title	Demonstrate knowledge of building science for trowel trades		
Level	4	Credits	3

Purpose	<p>This unit standard is intended for people working in the trowel trades sectors of the construction industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of building science for trowel trades to the level required of a commercially competent trowel trades trade professional.</p>
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Classification	Construction Trades > Core Construction
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Available grade	Achieved
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Guidance Information

1 Assessment

This unit standard is one of a family of standards intended to align with the *New Zealand Certificate in Trowel Trades – Specifications*, and the New Zealand Certificate in Trowel Trades (Level 4) with strands in Brick and Block Laying, Floor and Wall Tiling, Proprietary Plaster Cladding Systems, Ferro-cement Tank Manufacture, Refractory Installation, and Solid Plastering (with optional strands in Fixing Cavities and Substrates, and Decorative Mouldings) [Ref: 3137]. This standard is designed to be achieved in the context of one of the specific trowel trades reflected in the qualification's strands.

Evidence for this standard unit must reflect commercial competence.

Commercial competence requires a candidate to be capable of consistently performing the requirements of the skill specification:

- to current regulatory, industry and commercial standards
- within a commercially viable timeframe
- in commercial environments
- without supervision
- in different and unfamiliar contexts.

Commercial competence must be confirmed by a person who has current expertise in the trowel trade.

2 Definitions

Environmental factors refer to temperature, wind, seismic, climatic, and sub-thermal forces.

Loads are forces or pressures that add stress to a structure.

Load path is the direction a load will travel.

Trowel trades refer to brick and block laying, floor and wall tiling, ferro-cement manufacture, solid plastering, proprietary plaster cladding systems, or refractory installation.

- 3 Legislation, and guidance information relevant to this standard includes the following, and any subsequent amendments and replacements:

New Zealand Certificate in Trowel Trades – Specifications, BCITO, August 2021, available from www.WaihangaAraRau.nz.

Legislation accessed at www.legislation.govt.nz

- Building Act 2004,
- The New Zealand Building Code.

Skill specification and performance level guidance

Skill specification

Demonstrate knowledge of building science for trowel trades.

Knowledge

How loads and load path distribution work on and within a building or structure.

The principles of water penetration, and methods used to manage water ingress.

Range water penetration principles include – capillary action, hydrostatic pressure, gravity, wind pressure, surface tension;
methods include – deflection, drainage, drying, durability of materials.

How the physics of material can impact trowel trades operations.

Range strength, deflection, expansion, and contraction of materials;
also includes how materials perform – under compression and tension, or when subject to friction, wear, and environmental factors.

How the chemistry of materials can impact trowel trades operations.

Range composition, form, treatments, malleability, flammability, combustion, and volatility of materials.
also includes – compatibility of different materials due to their chemical composition, manner of use, susceptibility to deterioration over time, effects on the environment and people.

Performance level guidance

Performance must reflect the level of building science knowledge required of a trowel trades professional for at least one specific trowel trade: brick and block laying, floor and wall tiling, ferro-cement tank manufacture, solid plastering, proprietary plaster cladding systems, and/or refractory installation.

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	27 September 2018	31 December 2025
Review	2	25 August 2022	N/A

Consent and Moderation Requirements (CMR) reference	0048
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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 Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@WaihangaAraRau.nz if you wish to suggest changes to the content of this unit standard.