

Title	Use mathematics for trowel trades projects		
Level	4	Credits	4

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 use mathematics for trowel trades projects 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 unit standard 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 Definition

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,
- Health and Safety at Work Act 2015,
- The New Zealand Building Code.

Best practice and good practice guidelines

- *The Absolutely Essential Health and Safety Toolkit for Small Construction Sites*, and other Worksafe NZ publications available from www.worksafe.govt.nz.

Skill specification and performance level guidance

Skill specification

Use mathematics for trowel trades projects.

Knowledge

How different units of measurement are used in a specific trowel trade.

Range linear length, weight, volume, time, temperature.

How conventions around the use of centres and spacings apply to specific trowel trade operations.

Range individual, overall, running, in-and-over, centre-to-centre, outside measurement.

How to calculate area and volume.

Range rectangular, triangular and circular shapes.

Trigonometric calculations used to determine lengths and angles.

Range may include – Pythagoras Theorem, Sine, Cosine, Tangent, 3, 4, 5 Rule.

How to use and apply percentages and ratios to trowel trades calculations.

How to use and apply fractions to trowel trades calculations.

Skills

Undertake measurements and calculations in one, two and three dimensions.

Range measurements from working drawings or an on-site application.

Apply conventions around centres and spacings to trowel trades operations.

Use the mathematical principles associated with right angled triangles.

Calculate product quantities for trowel trades operations.

Range application of product coverage rate or cutting allowance, wastage allowance.

Make calculations to prepare job costs for trowel trades projects.

Range may include – time, travel, disposal, materials plus GST.

Performance level guidance

Performance must reflect application of mathematics for operations related to at least one of the following trowel trades in a commercial environment: 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.