

Title	Demonstrate knowledge of science in a construction stonemasonry context		
Level	4	Credits	6

Purpose	<p>This unit standard is intended for those working in the stonemasonry industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of science in a construction stonemasonry context to the level of performance required of a commercially competent construction stonemason.</p>
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Classification	Masonry > Stonemasonry
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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 Stonemasonry – Specifications*, and the *New Zealand Certificate in Stonemasonry (Level 4) with strands in Monumental Masonry, Construction Stonemasonry, and Natural Stone Fixtures and Fittings (with optional strands in Banker Masonry, and Conservation and Preservation)* [Ref: 2737].

Evidence for this unit standard must reflect commercial competence.

Commercial competence requires the candidate to demonstrate knowledge and skills in the context of the currently accepted requirements of a business operating in a commercial environment.

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

2 Definition

Workplace procedures refer to the documented procedures specific to a workplace which sets out the standard and the required practices of that workplace, which may include workplace codes of conduct, workplace safety policies and management plans, job specifications, and building requirements.

- 3 Guidance information relevant to this standard includes the following, and any subsequent amendments and replacements:
- Health and Safety at Work Act 2015.
 - *New Zealand Certificate in Stonemasonry – Specifications*, Waihanga Ara Rau, February 2023, available from www.waihangaararau.nz.
 - *Stonemasonry Best Practice Guide 2022*, available from New Zealand Stone Masons Association [New Zealand Stone Mason Association | Stonemasonry Best Practice Guide \(nzsma.co.nz\)](http://New Zealand Stone Mason Association | Stonemasonry Best Practice Guide (nzsma.co.nz)).

Skill specification and performance level guidance

Skill specification

Demonstrate knowledge of science in a construction stonemasonry context.

Knowledge

How loads are transferred on and within a stonemasonry structure.

The impact of site and soil conditions on structural and construction requirements for stonemasonry structures.

Range includes – sub strata and soil composition and compaction, proximity of the water table, potential for earthquake and geothermal activity.

The principles of water penetration and methods used to manage weathertightness for stonemasonry structures.

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

Materials physics.

Range includes – strength, deflection, expansion of materials, how materials perform under compression and tension, performance when subject to friction, wear or extreme temperatures.

Materials chemistry.

Range includes – composition, form, treatments, malleability, flammability, volatility of materials, compatibility of materials due to their chemical composition; the manner in which they are used; their susceptibility to deterioration over time; their effects on building performance, the environment and people.

The principles of energy efficiency in stone buildings.

Range includes – design, building placement, heat transfer, thermal mass, insulation.

Performance level guidance

Performance must reflect workplace procedures, legislative requirements, New Zealand Standards, best practice guides, job documentation, and job specifications relevant to construction stonemasonry.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 November 2017	31 December 2026
Review	2	28 September 2023	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 Waihangara Ara Rau Construction and Infrastructure Workforce Development Council qualifications@waihangaararau.nz if you wish to suggest changes to the content of this unit standard.