

Title	Demonstrate knowledge of fresh and hardened concrete testing		
Level	4	Credits	15

Purpose	<p>This unit standard is intended for people working in the concrete production industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of fresh and hardened concrete testing to the level of performance required of a commercially competent concrete production batching operator.</p>
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Classification	Concrete > Concrete Production
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Available grade	Achieved
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Guidance Information

1 Assessment

This unit standard is intended to align with the *New Zealand Certificate in Concrete Production – Specifications* and the *New Zealand Certificate in Concrete Production (Level 4)* [Ref: 4187].

Evidence for this standard must reflect commercial competence.

Commercial competence refers to the ability 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 with current expertise in concrete production.

2 Definitions

The *Plant Audit Scheme* sets out the operating regulations and practices for each production plant so accreditation requirements are met with the Concrete NZ Readymix Sector Group.

Workplace procedures refers to the documented procedures specific to a workplace which sets out the standard and the required practices of that workplace.

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

New Zealand Certificate in Concrete Production – Specifications, BCITO, October 2020 available from www.bcito.org.nz.

Legislation accessed at www.legislation.govt.nz

- Building Act 2004
- Hazardous Substances and New Organisms Act 1996
- Health and Safety at Work Act 2015
- The New Zealand Building Code.

Standards accessed at www.standards.govt.nz

- NZS 3104:2003 *Specification for concrete production*
- NZS 3109:1997 *Specification for concrete construction*
- NZS 3111 1986 *Methods of test for water and aggregate for concrete*
- NZS 3112.1:1986 *Methods of test for concrete – Tests relating to fresh concrete*
- NZS 3112.2:1986 *Methods of test for concrete – Tests relating to the determination of strength of concrete.*

Guidelines and Approved Codes of Practice

- *A Guide to Concrete Construction* available from www.concretenz.org.nz
- *The Plant Audit Scheme* available from www.concretenz.org.nz.

Skill specification and performance level guidance

Skill specification

Demonstrate knowledge of fresh and hardened concrete testing.

Knowledge

Procedures and requirements for conducting tests for moisture in aggregates.

Range drying method, total moisture calculation, free moisture calculation.

Procedures and requirements for conducting a slump test on fresh concrete.

Procedures and requirements for conducting a spread test on fresh and self-compacting concrete.

Procedures and requirements for conducting a compressive test on hardened concrete.

The effects of additives and admixtures on fresh concrete testing.

Range effects include slump life, water reduction, acceleration, retardation, air entrainment.

Interpreting safety data sheets for additives and admixtures used in concrete.

The process for comparing the compressive test results of hardened concrete to the allowed tolerances.

Procedures and requirements for calibrating testing equipment using known weights or standards, assessing calibration test results and completing appropriate follow up actions.

The reporting requirements when testing results that are outside allowable tolerances.

Performance level guidance

Performance must reflect plant audit scheme requirements, NZS 3104, NZS 3109, NZS 3111, NZS 3112.1, NZS 3112.2, and workplace procedures.

Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 June 2021	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 the Building and Construction Industry Training Organisation national.office@bcito.org.nz if you wish to suggest changes to the content of this unit standard.