

Title	Test concrete		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to test fresh and hardened concrete, and outline the requirements for specialist tests for concrete.
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Classification	Concrete > Concrete Technology
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Available grade	Achieved
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Guidance Information

Legislation and publications relevant to this unit standard include:
 Health and Safety in Employment Act 1992;
 NZS 3111:1986 *Methods of test for water and aggregate for concrete*; NZS 3112:1986 *Methods of test for concrete Parts 1, 2, 3, and 4*, available from Standards New Zealand (<http://www.standards.co.nz>).

Outcomes and performance criteria

Outcome 1

Test fresh and hardened concrete.

Performance criteria

1.1 Methods of sampling fresh concrete are described in terms of the workability tests used.

Range workability tests include but are not limited to – slump test, compacting factor test, vebe consistometer test, flow test.

1.2 Fresh concrete is tested and analysed to determine the proportions of a concrete mix.

Range analysis methods include but are not limited to – buoyancy, rapid analysis machine, pressure filter.

1.3 Methods of testing hardened concrete are described in terms of testing for saturated density, compressive strength and tensile splitting strength and flexural strength.

Range testing methods include but are not limited to – cubes, cores, flexural strength tests, surface absorption test, compression testing.

1.4 Hardened concrete is tested to determine density, strength and flexibility.

1.5 Fresh concrete is tested to determine air content and yield.

Outcome 2

Outline the requirements for specialist tests for concrete.

Performance criteria

2.1 Methods of sampling aggregates in concrete are described in terms of determining aggregate properties.

Range aggregate properties include but are not limited to – flakiness, clay, silt, dust, density, water absorption, voids, bulking, moisture content;
sampling methods include but are not limited to – sieve analysis, field settling test, pycnometer, calculation, over-drying method, siphon-can method, modified drying method, 'speedy' method.

2.2 Non-destructive tests for hardened concrete are described in terms of methods and purposes.

Range methods and purposes include but are not limited to – rebound hammer, ultrasonic pulse velocity, electromagnetic covermeter, gamma radiography, internal fracture test.

2.3 Core testing is described in terms of procedures for drilling, preparing and compression testing of cores.

Range core testing includes but is not limited to – calculating in-situ cube strength, actual and potential strengths.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 May 2001	31 December 2023
Revision	2	16 July 2004	31 December 2023
Rollover and Revision	3	25 January 2008	31 December 2023
Rollover and Revision	4	17 November 2011	31 December 2023
Review	5	28 October 2021	31 December 2023

Consent and Moderation Requirements (CMR) reference

0048

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.