

<b>Title</b>	<b>Demonstrate knowledge of handling, placing and finishing concrete</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>12</b>

<b>Purpose</b>	People credited with this unit standard are able to: compact and finish concrete; describe concrete handling and placing; describe the process for sprayed concrete; and describe the process for underwater concreting.
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<b>Classification</b>	Concrete > Concrete Technology
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<b>Available grade</b>	Achieved
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### Guidance Information

Legislation and publications relevant to this unit standard include:

Health and Safety in Employment Act 1992;

NZS 3109:1997 *Concrete construction*; NZS 3104:2003 *Specification for concrete production*, NZS 3101 Parts 1 and 2:1995 *Concrete structures standard – The design of concrete structures*, available from Standards New Zealand (<http://www.standards.co.nz>).

### Outcomes and performance criteria

#### Outcome 1

Compact concrete.

#### Performance criteria

1.1 Types of compacting equipment are described in terms of their application.

Range equipment includes but is not limited to – internal vibrators, external vibrators, surface vibrators, vibrating rollers, vibrating tables.

1.2 The difference between internal and external vibration is explained in terms of its use.

1.3 Factors that affect compacting are described in terms of special concretes.

Range special concretes include but are not limited to – architectural, air-entrained, no-fines, light-weight aggregate, heavyweight.

1.4 Compacting equipment is selected to meet job specifications.

1.5 Concrete is compacted according to job specifications.

- 1.6 The causes and effects of segregation, bleeding and plastic cracking are described in terms of how the effects can be reduced.

## **Outcome 2**

Finish concrete.

### **Performance criteria**

- 2.1 Methods of finishing concrete are described in terms of finishing the top surface.
- Range methods include but are not limited to – levelling, trowelling, grout checks.
- 2.2 Types of concrete finish are identified in terms of methods of production.
- Range types include but are not limited to – direct finish, indirect finish, uniformed finish, profiled finish.
- 2.3 Indirect surface finishes are described in terms of formwork characteristics.
- Range indirect surface finishes include but are not limited to – tooling, exposed aggregate, abrasive blasting, sand bed, broadcast surfaces, applied finishes.
- 2.4 Concrete is finished according to job specifications.
- 2.5 The process for repairing faults in concrete is explained in terms of selection of materials and repair method.
- Range faults may include but are not limited to – leakage problems, arrises, bolt holes, blowholes, sandy texture, water scour, honey combing, cracks.

## **Outcome 3**

Describe concrete handling and placing.

### **Performance criteria**

- 3.1 Methods for handling, transporting and placing concrete are described in terms of their effect on the properties of concrete.
- 3.2 Items of plant are selected for economic placing of concrete according to job requirements.

## **Outcome 4**

Describe the process for sprayed concrete.

**Performance criteria**

- 4.1 The dry mix process is described in terms of plant layout and equipment.  
Range equipment includes but is not limited to – guns, hoses, nozzles.
- 4.2 The wet mix process is described in terms of plant layout and equipment.  
Range equipment includes but is not limited to – guns, pumps, nozzles.
- 4.3 Methods of spraying concrete and mortar are described in terms of practice and applications.  
Range practice includes but is not limited to – surface preparation, reinforcement, placing, safety, joints, finishes; applications include but are not limited to – structural, protective, refractory, mortar.

**Outcome 5**

Describe the process for underwater concreting.

**Performance criteria**

- 5.1 The methods of placing concrete under water are described in terms of type.  
Range type of methods include but are not limited to – tremic, hydrovalves, skips, pumps, toggle bags, concrete packaged underwater, grouted aggregates, bagwork.
- 5.2 Bentonite suspension is described in terms of the material, how it acts and its uses.

**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

<b>Consent and Moderation Requirements (CMR) reference</b>	0048
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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