

<b>Title</b>	<b>Demonstrate knowledge of mould design, materials and construction methodology for precast concrete manufacture</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	<p>This unit standard is for people working in the construction industry.</p> <p>People credited with this standard can demonstrate knowledge of: mould design, materials, and construction methodology; reinforcing design, materials and steel tying methodology; concrete surface finishes; and rigging lifting and storing precast elements to the level of performance required of a commercially competent tradesperson.</p>
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<b>Classification</b>	Concrete > Precast Concrete
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<b>Available grade</b>	Achieved
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## Guidance Information

### 1 Assessment

This unit standard is intended to align with the *New Zealand Certificate in Concrete (Specialist) – Specifications* and the *New Zealand Certificate in Concrete (Specialist) (Level 4)* [Ref: 4186].

Evidence for this unit 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 precast concrete manufacture.

### 2 Definition

*Workplace procedures* refers to the documented procedures specific to a workplace that set out the standards and required practices of that workplace.

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

Specifications available from [qualifications@waihanga.nz](mailto:qualifications@waihanga.nz)

- *New Zealand Certificate in Concrete (Specialist) – Specifications*, BCITO, October 2020.

Legislation accessed at [www.legislation.govt.nz](http://www.legislation.govt.nz)

- Health and Safety at Work (General Risk and Workplace Management) Regulations 2016.

Standards accessed at [www.standards.govt.nz](http://www.standards.govt.nz)

- NZS 3101.1&2:2006 *Concrete structures*
- NZS 3114:1987 *Specification for concrete surface finishes*
- AS/NZ 4671:2019 *Steel for the reinforcement of concrete*.

Guidelines and Approved Codes of Practice accessed at [www.worksafe.govt.nz](http://www.worksafe.govt.nz)

- *The Absolutely Essential Health and Safety Toolkit*.

*New Zealand Guide to Concrete Construction 2011* (Revised Edition) accessed at [www.concretenz.org.nz](http://www.concretenz.org.nz).

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## Skill specification and performance level guidance

### Skill specification

Demonstrate knowledge of mould design, materials and construction methodology for precast concrete manufacture.

### Knowledge

The features of mould design in terms of form and functionality.

The materials used to construct moulds for precast concrete manufacture in terms of properties and application.

Range materials include – timber, steel, fibreglass, concrete.

The function of reinforcing in precast concrete elements.

Reinforcing materials and their application in precast concrete manufacture.

The materials used to construct reinforcing structures for precast concrete elements.

Range shape, strength grade, relative ductility, and size.

The methods used to construct reinforcing structures for precast concrete elements.

The surface finishes classification system and its application in precast concrete manufacture.

Range NZS 3114:1987 F – series.

The common blemishes that occur in off-the-form surface finishes and repair methods.

Range two colour variation blemishes and two physical irregularity blemishes.

The rigging requirements for lifting and moving precast concrete elements.

The safety requirements for moving and storing precast concrete elements.

The factors influencing storage of structural precast concrete elements.

Range factors include – height and loading capacity of storage area, load in and out sequencing, protection of concrete element.

### Performance level guidance

Knowledge must reflect workplace procedures, current regulatory, industry and commercial standards relevant to precast concrete manufacturing.

<b>Planned review date</b>	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	27 January 2022	N/A

<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>.

### Comments on this unit standard

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at [qualifications@waihanga.nz](mailto:qualifications@waihanga.nz) if you wish to suggest changes to the content of this unit standard.