

Title	Construct formwork, falsework and propping systems for concrete structures		
Level	4	Credits	15

Purpose	<p>This unit standard is intended for people working in the concrete construction industry.</p> <p>People credited with this standard can construct formwork, falsework and propping systems for concrete structures to the level of performance required of a commercially competent tradesperson.</p>
----------------	---

Classification	Concrete > Concrete Construction
-----------------------	----------------------------------

Available grade	Achieved
------------------------	----------

Guidance Information

1 Assessment

This unit standard is intended to align with the *New Zealand Certificate in Concrete Construction (Commercial and Civil Infrastructure) – Specifications* and the *New Zealand Certificate in Concrete Construction (Commercial and Civil Infrastructure) (Level 4)* [Ref: 4188].

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 concrete construction.

2 Definitions

Design specifications refers to the detailed description, characteristics, quantity, and quality, ratio and formation method of the material used in construction work.

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

- *New Zealand Certificate in Concrete Construction (Commercial and Civil Infrastructure) – Specifications*, BCITO, October 2020.

Legislation accessed at www.legislation.govt.nz

- Building Act 2004
- Resource Management Act 1991
- Health and Safety at Work (General Risk and Workplace Management) Regulations 2016.
- The New Zealand Building Code.

Standards accessed at www.standards.govt.nz

- NZS 3101.1&2:2006 *Concrete structures*
- NZS 3109:1997 *Concrete construction*.

Guidelines and Approved Codes of Practice accessed at www.worksafe.govt.nz

- *Approved Code of Practice for Powder-actuated, hand-held fastening tools*
- *Best Practice Guidelines for Working at height in New Zealand*
- *The Absolutely Essential Health and Safety Toolkit*.

New Zealand Guide to Concrete Construction 2011 (Revised Edition) accessed at www.concretenz.org.nz.

Skill specification and performance level guidance

Skill specification

Construct formwork, falsework and propping systems for concrete structures.

Knowledge

The types and purposes of formwork, falsework and propping systems.

Range includes – modular, gang, table, jump or climb, slipform, permanent systems, in-situ or custom made, and in-ground.

The systems, materials, accessories and construction methods used to construct and dismantle formwork for concrete structures.

The materials, accessories and construction methods used to fabricate, assemble and dismantle falsework and propping systems for concrete structures.

The loading factors on formwork during erection, concrete placing and curing.

Range loading factors during erection include – weight of materials, equipment, and wind;
loading factors during concrete placing include – weight of plastic-state concrete, pour rates and height, vibration methods, workers and equipment;
loading factors during curing include – fluidity of concrete.

The types and purpose of joints in concrete.

Range joint types include – contraction, isolation and expansion.

The types and purposes of cast-in elements.

Range includes – reinforcing chairs, brackets, ties, waffle slab components, conduits, bolts, plates, rods, pipes, penetrations, and ducting.

How to determine the stripping times for formwork.

The release and cleaning agents used with formwork and methods for application during formwork construction.

Skills

Fabricate, assemble, and dismantle formwork for foundations, and structural and non-structural concrete structures according to design specifications.

Fabricate, assemble, and dismantle falsework and propping systems for concrete structures according to design specifications.

Range includes – making from scratch and incorporating pre-made components.

Position, align and secure block-outs and cast-in elements for formwork construction according to design specifications.

Construct formwork to allow for construction joints in concrete structures according to design specifications.

Performance level guidance

Performance must reflect workplace procedures, current regulatory, industry and commercial standards relevant to concrete construction.

Formwork construction must be according to design specifications where these are present.

Planned review date	31 December 2026
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 January 2022	N/A

Consent and Moderation Requirements (CMR) reference	0048
--	------

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 if you wish to suggest changes to the content of this unit standard.