

<b>Title</b>	<b>Describe and design formwork for concrete construction</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>12</b>

<b>Purpose</b>	People credited with this unit standard are able to: interpret construction drawings; design formwork; and describe reinforced concrete production.
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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 3114:1987 *Specification for concrete surface finishes*, NZS 3610:1979 *Specification for profiles of mouldings and joinery*, available from Standards New Zealand (<http://www.standards.co.nz>);

AS 3610-1995, *Formwork for concrete*, available from Standards Australia (<http://www.standards.org.au/Default.aspx>).

### Outcomes and performance criteria

#### Outcome 1

Interpret construction drawings.

#### Performance criteria

- 1.1 Elements of construction drawing are identified in terms of layout, projections, lines, dimensions and scales.
- 1.2 Construction drawings are interpreted in terms of form and size of the structure represented by the drawing.

#### Outcome 2

Design formwork.

#### Performance criteria

- 2.1 Formwork and falsework are described in terms of their application and types of materials used.
- 2.2 Factors affecting pressures in formwork are identified in terms of their effects.

- 2.3 Arrangements of formwork for columns, suspended slabs, walls and beams are described in terms of sizes, spacing and disposition.
- 2.4 Requirements for pre-pouring and striking are identified in terms of columns, slabs, walls and beams.
- 2.5 The factors which affect the pressure and working loads of concrete on formwork are explained in terms of distribution and propped and vertical formwork.
- 2.6 The functions of formwork ironmongery and sheathing materials are described in terms of their effect on stripping.
- 2.7 Arrangements of formwork for structural members are designed in accordance with job brief.
- 2.8 Procedures for maintenance and repair of formwork are identified in terms of handling and storage.
- 2.9 Arrangement of formwork to kickers, box outs, stop ends and trowelling forms are designed according to their applications and the job brief.
- 2.10 Types of release agents are identified in terms of their effects on striking and concrete finish.
- 2.11 The use of permanent formwork is identified in terms of proprietary systems.

### **Outcome 3**

Describe reinforced concrete production.

#### **Performance criteria**

- 3.1 Concepts of tension, compression, shear and bending are described in terms of beams, slabs, and columns under load.
- 3.2 The reasons for the disposition of reinforcement in beams, slabs, cantilevers, columns and walls are identified in terms of controlling cracking.

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**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	27 January 2022	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>.