

<b>Title</b>	<b>Plan and carry out concrete prestressing operations</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	<p>This unit standard is intended for people working in the construction industry.</p> <p>People credited with this standard can plan and carry out concrete prestressing operations 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 concrete prestressing operations.

### 2 Definitions

*Concrete prestressing operations* refers to the processes for bonding pre-tensioned high tensile steel bars or wires into a concrete structure resulting in the transfer of strength of the steel into the concrete once hardened.

*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*.

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

- *Approved Code of Practice for Load-lifting Rigging*
- *Practical Guide for Working Safely With Hazardous Substances*
- *Approved Code of Practice for Powder-actuated, hand-held fastening tools*
- *Best Practice Guidelines for Working at height in New Zealand*
- *Good Practice Guidelines – Safe Work With Precast Concrete*
- *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).

## Skill specification and performance level guidance

### Skill specification

Plan and carry out concrete prestressing operations.

### Knowledge

The planning requirements for concrete prestressing operations.

Range includes – selection of casting area, moulds, stressing strands, prestressing equipment.

The hazards and risks associated with operating prestressing equipment and machinery.

Range includes potential for serious harm or death from – equipment failure, lack of knowledge, poor or non-compliance with safety and standard operating procedures.

The procedures for managing the hazards and risks for prestressing operations.

The procedures for performing concrete prestressing operations.

The load extension checking and confirmation procedures for a stressing rig.

### Skills

Prepare to carry out concrete prestressing operations.

Range includes – setting up casting area, mould preparation, locating stressing equipment, positioning strands.

Carry out concrete prestressing operations.

Range includes – operation of stressing equipment, loading of strands, distressing, demoulding and associated quality checking.

Check and confirm load extensions meet specifications.

Manage risks associated with operating prestressing equipment and machinery.

### Performance level guidance

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

Operation of prestressing equipment must be according to manufacturer's instructions.

<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 Waihangara 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.