

Post-tension Post-tension concrete structures

Kaupae Level	4
Whiwhinga Credit	10
Whāinga Purpose	This skill standard is for people working in or entering the construction trade. People credited with this skill standard have the skills to post-tension concrete structures. This skill standard aligns with the New Zealand Certificate in Concrete Construction (Commercial and Civil Infrastructure) (Level 4) [Ref XXX] and may also contribute to other construction and infrastructure qualifications.

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Carry out post-tensioning for concrete structures.	a. Tendons, ducts or anchors are installed in accordance with plans and specifications.
	b. Post-tensioning is carried out to the specified force and sequence and with consideration for the approved concrete strength.
	c. Work is completed in accordance with industry standards.
	d. Tensioning work is documented accurately to reflect work undertaken and are and stored in accordance with plans and specifications.
2. Finish and complete quality checks to confirm post-tensioned concrete structures.	a. Tendon ends or anchors are finished and protected to plans and specifications.
	b. Grouting, sealing, or other finishes are completed in accordance with plans, specifications, and industry standards.
	c. Alignment, tensioning, and anchorage details are confirmed to meet plans and specifications.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

To achieve this standard, the candidate must be able to complete post-tensioning for concrete structures in line with industry standards.

Concrete strength must be verified by the designer or engineer before the candidate progresses with post-tensioning.

Concrete structures may include beams, slabs, bridge decks, or other post-tensioned concrete elements.

Industry standards must reflect industry best practice, workplace procedures, and be within acceptable tolerances as defined in New Zealand codes, standards and regulations.

Plans and specifications can include working drawings, plan specifications, manufacturer specifications, installation instructions and demolition and project plans.

Evidence for this standard must be demonstrated:

- to current and relevant Legislation, Standards, and Codes (including safety),
- in an environmentally sustainable manner,
- within an acceptable timeframe,
- with acceptable behaviours.

Ngā momo whiwhinga | Grades available

Achieved.

Ihirangi waitohu | Indicative content

Planning and site preparation

- Plans and specifications
- Site layout, access and safety zones
- Equipment and tool preparation

Post-tensioning equipment and materials

- Tendons, ducts, anchors, wedges, and couplers
- Hydraulic jacks, pumps, gauges, bar chains and hoses
- Calibrating jacks to gauges
- Grouting and sealing materials

Installation and tensioning

- Tendon and duct placement
- Anchorage positioning and securing
- Tensioning forces and sequence
- Monitoring and measuring tension

Inspection and finishing

- Concrete strength confirmation
- Grouting, sealing, and protection of anchorages
- Recording and reporting tensioning data

Industry standards

Rauemi | Resources

Programme Guidance information available from qualifications@waihangaararau.nz.

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Waihanga Ara Rau Construction and Infrastructure Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Concrete > Concrete Construction
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0120

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	dd mm 2025	N/A
Kōrero whakakapinga Replacement information	This skill standard replaced unit standard 32595.		
Rā arotake Planned review date	[dd mm yyyy]		

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihangaararau.nz to suggest changes to the content of this skill standard.