

41144**Post-tension concrete structures**

Kaupae Level	4
Whiwhinga Credit	10
Whāinga Purpose	<p>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.</p> <p>This skill standard aligns with the New Zealand Certificate in Concrete Construction (Building and Infrastructure) (Level 4) [Ref: 4188] and may also contribute to other construction and infrastructure qualifications.</p>

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 the work undertaken 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 to industry standards.

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

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.

Definitions:

Acceptable behaviours refer to professional behaviours expected in a construction environment. This includes working safely with others, communicating effectively, following workplace procedures, respecting people, tools, equipment, and materials, and responding appropriately to hazards and changing work conditions.

Concrete structures refer to a range of building and civil infrastructure works, including slabs, walls, beams, columns, foundations, footpaths, retaining structures and other concrete elements.

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 info@cstisb.nz.

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Construction and Specialist Trades Industry Skills Board
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Planning and Construction > 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	26 February 2026	N/A
Kōrero whakakapinga Replacement information	This skill standard replaced unit standard 32595.		
Rā arotake Planned review date	31 December 2030		

Please contact Construction and Specialist Trades Industry Skills Board at info@cstisb.nz to suggest changes to the content of this skill standard.