

40793 Identify requirements for the installation of columns, posts, beams, and portal frames

Kaupae Level	4
Whiwhinga Credit	5
Whāinga Purpose	<p>This skill standard is for people intending to complete qualifications and credentials in the carpentry trades.</p> <p>People with this skill standard have the knowledge to identify the requirements for the installation of columns, posts, beams, and portal frames.</p> <p>This skill standard may contribute to New Zealand qualifications designed for construction trades.</p>

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

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Identify requirements for the installation of columns, posts, beams, and portal frames.	a. The different types, purposes, materials, and construction methods used to create in-situ columns, posts, beams, and portal frames are identified.
	b. Requirements for propping and supporting of columns, posts, beams, and portal frames until they are self-supporting are identified.
	c. The installation requirements for columns, posts, beams, and portal frames are identified.
	d. Requirements of sub-contractors when installing columns, posts, beams, and portal frames are identified.
	e. Requirements to receive columns, posts, beams, or portal frames on a construction site are identified.

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

Assessment specifications:

To achieve this standard the candidate must be capable of identifying requirements for the installation of columns, posts, beams, and portal frames to industry standards.

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

This standard may be assessed in the workplace.

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,
- in different and unfamiliar contexts,
- with acceptable behaviours.

Ngā momo whiwhinga | Grades available

Achieved

Ihirangi waitohu | Indicative content

Components and primary purpose

- Columns and beams: understanding their role in supporting structures, including vertical and horizontal load-bearing functions.

Formwork/falsework and propping systems

- Formwork and falsework: use of temporary structures (formwork/falsework) to support poured concrete until it hardens.
- Propping systems: techniques for supporting formwork during concrete placement.

Constructing formwork for concrete placement

- Stud and sheathing: installing wooden studs and sheathing for forming concrete moulds.
- Shutters and proprietary systems: using proprietary systems for forming concrete walls and beams.
- Erecting and bracing: positioning and bracing one side of formwork, checking for straightness.
- Reinforcing and tie bolts: fixing reinforcing steel and positioning tie bolts and cast-ins.
- Tying formwork together: securing formwork by tying opposite sides to ensure stability.

Propping in-situ concrete beams

- Shoring and bracing: using adjustable falsework frames/towers, screw jacks, and bearers to resist vertical and lateral loads while concrete sets.

Erecting and supporting pre-cast concrete columns

- Manufacturer's documentation: reviewing the manufacturer's specifications for proper handling and installation.
- Lifting and positioning: safe lifting and placement of pre-cast concrete columns and beams into position.
- Connections: methods for connecting columns to foundations/slabs and ensuring stability.

- Temporary support: using platforms/falsework systems for temporarily supporting beams during the connection process.

Installing timber and composite posts, beams, and portals

- Fixing posts to foundation: using post brackets for secure attachment to foundations/slabs.
- Temporary bracing: ensuring posts are temporarily braced for stability.
- Lifting and positioning beams: techniques for safely lifting beams into place.
- Permanent fixing: using joints, connectors, and other methods to permanently secure beams.
- Alignment and levelling: accurately aligning and levelling posts and beams during installation.

Heavy structural steel profiles and coatings

- Steel profiles: understanding the different profiles used for structural steel posts, beams, and frames.
- Coatings: identifying finishes and coatings used to protect steel from corrosion.

Installing steel posts, beams, and portal frames

- Fixing to foundation/slab: methods for fixing steel posts and beams securely to foundations/slabs, including welds and connectors.
- Permanent fixing of beams: techniques for using connectors or welds to secure beams in place.

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	Planning and Construction > Construction Trades > Carpentry
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	28 August 2025	N/A
Kōrero whakakapinga Replacement information	This skill standard replaced unit standard 30848.		
Rā arotake Planned review date	31 December 2030		

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.