Post and Beam L4

Prepare for the installation of columns, posts, beams, and portal frames

Kaupae | Level	4
Whiwhinga | Credit	
Whāinga | Purpose	This skill standard recognises the skills required to prepare for the installation of columns, posts, beams, and portal frames. It contributes to the New Zealand Certificate in Carpentry (Level 4) with optional strand in Metal Roof Cladding Installation [Ref:2738].

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

Hua o te ako | Learning outcomes	**Paearu aromatawai** | Assessment criteria
1. Prepare 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. Propping and supporting of columns, posts, beams, and portal frames to become self-supporting is identified.
	c. The installation processes for columns, posts, beams, and portal frames are identified.
	d. Requirements of sub-contractors when installing columns, posts, beams, and portal frames is identified.
	e. Preparations to receive columns, posts, beams, or portal frames on a construction site are completed to reflect industry standards.

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

Assessment specifications:

To achieve this standard the candidate must be capable of preparing 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:

- 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.

Prestressed concrete

- Prestressed concrete: understanding its purpose and when it is used in construction for increased strength and durability.

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	0048

Hātepe | Process	**Putanga** | Version	**Rā whakaputa** | Review Date	**Rā whakamutunga mō te aromatawai** | Last date for assessment
Rēhitatanga | Registration	1	[dd mm yyyy]	N/A
Kōrero whakakapinga | Replacement information	This skill standard replaces unit standards:		
Rā arotake | Planned review date	31 December 2029		

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.