40114   Install and secure data cables

Kaupae	Level	3
Whiwhinga	Credit	15
Whāinga	Purpose	This skill standard recognises the skills required to install and secure data cables in medium to large complex environments. This skill standard aligns with the New Zealand Certificate in Data Cabling (Level 3) [Ref: 5057].

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

Hua o te ako	Learning outcomes	Paearu aromatawai	Assessment criteria
1. Install and secure data cables into cable support systems.	a. Common data cable types are identified, and their care, use, and applications are explained.
	b. Data cables are installed and secured into cable pathways according to plans and specifications.
	c. Data cables are installed and secured to catenary wires according to plans and specifications.
2. Install unsupported data cables into walls.	a. Unsupported data cables are installed into both timber and steel framed walls according to manufacturer's specifications.
3. Label data cables.	a. Cables are labelled according to plans, client specifications, or industry standards.

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

Assessment specifications:

Assessment evidence must be from worksites where the scope of work provides the opportunity to demonstrate the skills and knowledge in medium to large complex environments where the work may span multiple rooms or multiple floors, and multiple cable runs.

Medium to large complex environments may include hotels, hospitals, prisons, schools, universities, factories, multi-room office buildings, data centres, shopping malls that may be 200m^2 or larger.

Assessment evidence for this standard must comply with relevant legislation, technical standard AS/NZS 11801, manufacturers specifications, including cabling pathway capacity and distance separation from other building services, and meet workplace health and safety requirements. Cables must not be damaged or exposed to damage. Assessment evidence must meet worksite health and safety requirements.

Cable pathways include:

- Cable trays or baskets
- Conduit
- Trunking

Ngā momo whiwhinga | Grades available

Achieved

Ihirangi waitohu | Indicative content

Safe working practices

- Working at heights.
- Hazard identification and minimisation.
- Working with other trades people and around installed services.
- Working around electrical and plumbing infrastructure.

Tools

- Identification, safe use, and maintenance of tools used in cable installation.

Cable installation

- Reading cabling plans.
- Industry standards and obtaining and following manufacturers requirements.
- Running cable and installing within cable trays, baskets, conduits, trunking.
- Fastening methods and fastening cable to catenary wire.
- Pathway best practice including bundle sizes and maximum conduit capacity.
- Cable types, their uses, and features, including maximum cable lengths.
- Horizontal, backbone, patch.
- Shielded, unshielded, copper twisted pair, fibre optic.
- Safe cable handling, bend radius, pulling tension.
- Cable suitability for environmental conditions.
- Calculating surplus cable for a bare communications room.
- Requirements of cabling for Power over Ethernet (PoE), impact of cable length and high-powered devices.
- Installation into steel and timber framed walls.

Safe handling of data cable

- Protection from environmental conditions including in unfinished buildings.
- Protection from worksite conditions and other trades.
- Distance separation from building services including electrical and plumbing infrastructure.
- Bend radius, protection from water.

Cable labelling

- Client requirements, industry standards, and using plans.

Rauemi | Resources

- Standards available from www.standards.govt.nz.
  - o NZS 3604:2011 Timber Framed Buildings.
  - o AS/NZS 11801.1:2019 Information Technology – Generic cabling for customer premises: Part 1: General requirements.

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	Engineering and Technology > Telecommunications > Telecommunications - Service Delivery
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga | CMR	CMR 0101

Hātepe | Process	**Putanga** | Version	**Rā whakaputa** | Date	**Rā whakamutunga mō te aromatawai** | Last date for assessment
Rēhitatanga | Registration	1	27 June 2024	N/A
Kōrero whakakapinga | Replacement information	N/A		
Rā arotake | Planned review date	31 December 2029		

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