

<b>Title</b>	<b>Install and maintain telecommunications cable systems</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>25</b>

<b>Purpose</b>	<p>This standard is intended for technicians who work on complex telecommunications networks and covers installation and maintenance of telecommunications cable systems.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> <li>– plan and prepare for the installation of telecommunications cable systems;</li> <li>– install and maintain telecommunications cable systems;</li> <li>– joint telecommunications cables;</li> <li>– acceptance test telecommunications cable systems; and</li> <li>– rearrange and cutover telecommunications cable systems.</li> </ul>
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<b>Classification</b>	Telecommunications > Telecommunications – Service Delivery
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with relevant industry and legislative requirements. Design specifications and/or detailed instructions regarding the installation should be supplied during assessment. Installation excludes system design or layout, contract negotiations, or commissioning and operational configuration adjustments required in complex network installations.
- 2 Legislation and references relevant to this unit standard include:
  - Electricity Act 1992;
  - Health and Safety at Work Act 2015;
  - Privacy Act 2020;
  - Resource Management Act 1991;
  - Telecommunications Act 2001;
  - New Zealand Telecommunications Forum Inc., Customer Complaints Code; available from <https://www.tcf.org.nz/industry/resources/publications/industry-standards-guides/>;
  - Local body regulations;
  - and all subsequent amendments and replacements.
- 3 Definitions  
*Cable* refers to paired copper cable, fibre optic cable, coaxial cable.

*Cable systems* refer to one or more sections of cable with access terminations at each end, and all intermediate plant and equipment necessary for the successful transmission of signals. Typical intermediate plant and equipment includes joint enclosures, manholes, poles, amplifiers, regenerators, repeaters, pressurisation plant, power feeding, organisers, and terminal frames.

*Complex* refers to three or more components and/or services used together in networks or enterprise solution systems.

*Industry requirements* refer to relevant policies, processes, methodologies, industry codes of practice, site specific health and safety plans, standard operating procedures, quality plans, work plans, traffic management plans, contract work programmes, job safety analysis, safe work method statements, job instructions, manufacturer's requirements, contract specifications, manuals, and procedural documents.

*Specifications* refer to detailed job specifications, drawings, instructions, manufacturer's specifications and instructions or any employer or company specifications.

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## Outcomes and performance criteria

### Outcome 1

Plan and prepare for the installation of telecommunications cable systems.

#### Performance criteria

- 1.1 Project instructions are evaluated to establish the scope and timing of the installation work.
- 1.2 Installation plans are developed in terms of available resources, required materials, timing, and site access and details are agreed with customer.
- 1.3 Materials are drawn from stock or purchased and delivered to site.

### Outcome 2

Install and maintain telecommunications cable systems.

#### Performance criteria

- 2.1 The fitting, mounting, location, and positioning of hardware is in accordance with project instructions.

Range may include but is not limited to – cable trays, ducting, terminating blocks, cabinets, frames, connectors, catenary wiring, bolts, clamps, stays, pole zones, wind loading factors, minimum approach distances;  
evidence of 10 items of hardware is required.

- 2.2 Cabling is installed.
- 2.3 Documentation of installation progress is maintained.

2.4 Drawings are marked up.

### **Outcome 3**

Joint telecommunications cables.

Range paired cable, coaxial cable, optical fibre cable.  
evidence of two types of cable is required.

#### **Performance criteria**

3.1 Jointing materials are drawn from stock or purchased and delivered to site.

3.2 Cables are prepared for jointing in accordance with specifications.

3.3 Conductors or fibres are identified and jointed in accordance with specifications.

3.4 Conductor and screen continuity are established in accordance with specifications.

3.5 Earth bonding is established in accordance with specifications.

Range housings, frames, end of line taps, cable support strands, sheaths.

3.6 Joints are closed, sealed, and, where appropriate, pressurised and pressure tested in accordance with specifications.

### **Outcome 4**

Acceptance test telecommunications cable systems.

#### **Performance criteria**

4.1 Visual inspection confirms that all specified items have been installed.

4.2 Testing confirms that cabling interconnections are to the specified terminations, and that the system performs according to specification.

4.3 Test results are recorded in accordance with specifications and project instructions.

### **Outcome 5**

Rearrange and cutover telecommunications cable systems.

#### **Performance criteria**

5.1 Project instructions are evaluated to establish the scope, sequence, and timing of the cutover.

5.2 Materials are purchased or drawn from stock and delivered to site.

- 5.3 Shut-down procedures are carried out in accordance with service centre and project instructions.
- 5.4 Preparatory work is performed in accordance with project instructions.
- 5.5 Conductors are identified and jointed in accordance with specifications.
- 5.6 Joints closed, sealed, and, where appropriate, pressurised and pressure tested in accordance with specifications.
- 5.7 Redundant cable and equipment are re-deployed, removed, or disposed of in accordance with industry practice.
- 5.8 Documentation is completed in accordance with project instructions.

Planned review date	31 December 2026
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 September 2002	N/A
Rollover and Revision	2	25 February 2008	N/A
Rollover and Revision	3	23 November 2017	N/A
Revision	4	28 October 2021	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact Connexis – Infrastructure Industry Training Organisation [qualifications@connexis.org.nz](mailto:qualifications@connexis.org.nz) if you wish to suggest changes to the content of this unit standard.