

Title	Install and maintain basic telecommunications systems and services		
Level	3	Credits	10

Purpose	<p>This unit standard is intended for technicians who require basic knowledge of telecommunication networks.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – select and install cable support systems and cables for basic telecommunication systems; – select and install telecommunications equipment for basic telecommunication systems; and – test and commission telecommunications installations.
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Classification	Telecommunications > Telecommunications – Service Delivery
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Available grade	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.
- 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/>;
 - and all subsequent amendments and replacements.
- 3 Definitions

Basic knowledge refers to fundamental operational and theoretical knowledge of the subject matter to interpret available information.

Frame refers to a structure into which an equipment cabinet, or equipment rack, is mounted.

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.

Multi-pair cable refers to a twisted pair cable containing more than 24 pairs.
Remote access refers to access to installed equipment by a management or operations centre of a service provider.

- 4 The range for this unit standard is 10 basic installations covering at least two different types of cable and two different types of equipment.

Outcomes and performance criteria

Outcome 1

Select and install cable support systems and cables for basic telecommunication systems.

Performance criteria

- 1.1 Cable support systems for each of the 10 basic installations are installed.
- Range support systems may include but are not limited to – cable tray, ladder rack, trunking, conduit, aerial support systems, catenary wire;
 mounting hardware – fittings, fixtures, fastenings;
 evidence of three different types of support systems is required across the 10 installations.
- 1.2 Common telecommunications cables for each of the 10 basic installations are selected and installed.
- Range cables may include – copper, coaxial cable, fibre, multi-pair cable;
 applications may include but are not limited to – customer premises equipment (CPE), broadcasting, radio systems, access network, core network, signals and communications;
 install may include but is not limited to – terminations, joints, use of colour code, use of appropriate tools and equipment, limitations of methods and techniques used for a given application;
 evidence is required for all cables installed relevant to the installation.
- 1.3 Management practices are demonstrated for telecommunications cable support systems during installation.
- Range management practice – bend radius, securing, grounding, bonding, labelling, support, separation of services, future expansion;
 support systems may include but are not limited to – cable tray, ladder rack, trunking, conduit, aerial, buried;
 evidence is required for management practice and support systems relevant to the installation.

1.4 Site conditions are considered when performing installations.

Range site conditions may include but are not limited to – moisture ingress, insect and vermin ingress, corrosion, ventilation, equipment protection, cable protection, lightning protection, dust control, water and spoil management, fire stopping; evidence is required for all site conditions relevant to the installation.

Outcome 2

Select and install telecommunications equipment for basic telecommunication systems.

Performance criteria

2.1 Frames/cabinets for each of the 10 basic installations are selected and installed in accordance with regulations and company requirements.

Range frames/cabinets may include but are not limited to – cabinets, racks, frames, seismic frames; locations may include but are not limited to – equipment room/closet, patch-panels, cabinets, pedestals, pit, manhole; mounting methods may include but are not limited to – wall mount, pole mount, plinth, rack mount, underground; evidence is required for frames/cabinets, locations, and mounting methods relevant to the installation.

2.2 Site conditions are considered when performing each of the 10 basic installations.

Range site conditions may include but are not limited to – moisture ingress, insect and vermin ingress, corrosion, ventilation, equipment protection, cable protection, lightning protection, dust control, water and spoil management, fire stopping; evidence is required for all site conditions relevant to the installation.

Outcome 3

Test and commission telecommunications installations.

Performance criteria

3.1 Common commissioning testing is completed to ensure installation meets minimum standards.

Range types of tests – visual inspections, polarity, functional tests, end to end tests, remote access; test – safety, harm to equipment, damage to cabling, incorrect function, faults.

3.2 Required documentation is prepared before handover of installation in accordance with industry practice.

Range documentation – technical test results, as built technical diagrams, customer documentation.

3.3 Installation site is prepared, and removal of waste from site for handover of installation is completed, to meet stakeholder requirements.

3.4 Handover procedures are completed for the installation to meet stakeholder requirements.

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	18 July 2013	N/A
Rollover and Revision	2	23 November 2017	N/A
Rollover and Revision	3	27 June 2019	N/A
Revision	4	28 October 2021	N/A

Consent and Moderation Requirements (CMR) reference	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 if you wish to suggest changes to the content of this unit standard.