

Title	Demonstrate knowledge of cable selection, underground cable systems, and specialised cables		
Level	4	Credits	4

Purpose	People credited with this unit standard are able to demonstrate knowledge of: <ul style="list-style-type: none"> – cables for installation; – cable systems for use underground; and – specialised cables.
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Classification	Electrical Engineering > Core Electrical
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Available grade	Achieved
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Guidance Information

- 1 **References**
AS/NZS 3000 (version as cited in the Electricity (Safety) Regulations), *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*;
AS/NZS 3008.1.2:2017, *Electrical installations - Selection of cables (Cables for alternating voltages up to and including 0.6/1 kV - Typical New Zealand conditions)*;
New Zealand Electrical Codes of Practice (NZECP) as cited in the Electricity (Safety) Regulations, available at <https://www.worksafe.govt.nz>;
or any current subsequent amendments and replacements.
- 2 **Definitions**
MIMS – mineral insulated metal sheathed.
Selection of cables – is influenced by volt drop, current carrying capacity, short circuit current, environmental conditions.
Technical information – refers to cable manufacturers data, AS/NZS 3000, and AS/NZS 3008.1.2.
- 3 This unit standard can be used together with other relevant unit standards, additional learning and workplace training to meet the requirements of the Electrical Workers Registration Board (EWRB) core competencies, available at <https://www.ewrb.govt.nz>.
- 4 Candidates are expected to locate and reference the relevant clauses in the electrical Standards relating to this unit standard.
- 5 This unit standard applies to installations and equipment rated above extra-low voltage unless specifically stated.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of cables for installation.

Performance criteria

- 1.1 Describe the factors that influence cable rating and selection.
- Range must include but is not limited to – installation methods and environment.
- 1.2 Explain the method of calculating maximum demand.
- 1.3 Identify appropriate cables using technical information.
- Range size and type of one single-phase mains cable, one multiphase mains cable.

Outcome 2

Demonstrate knowledge of cable systems for use underground.

Range two cable systems.

Performance criteria

- 2.1 Identify appropriate cables for underground situations.
- 2.2 Identify general requirements for underground cables from AS/NZS 3000.
- 2.3 Describe the types of cable protection and installation systems for cables underground in accordance with AS/NZS 3000.

Outcome 3

Demonstrate knowledge of specialised cables.

Performance criteria

- 3.1 Briefly describe the construction, general characteristics and applications of specialised cables.
- Range two specialised cables;
may include but is not limited to – aerial conductors, MIMS cables.

3.2 Briefly describe the construction of support systems for aerial conductors.

Range two support systems;
may include but is not limited to – power poles, aerial conductors
terminating at buildings.

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	24 March 2022	N/A

Consent and Moderation Requirements (CMR) reference	0003
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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 Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihanga.nz if you wish to suggest changes to the content of this unit standard.