

Title	Select and install flexible cords and cables		
Level	2	Credits	4

Purpose	<p>This unit standard is for people in the electrical and related industries, who need to make up and connect flexible cords to appliances and accessories.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of flexible cords and cables; – identify flexible cords and cables and their characteristics; – identify and select flexible cords and cables and connect to accessories; – select flexible cords and cables, connect to appliances, and test connections; and – identify and select cables for mains and submains circuits.
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Classification	Electrical Engineering > Core Electrical
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Available grade	Achieved
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Guidance Information

- 1 This unit standard has been developed for learning and assessment off-job or on-job.
- 2 This unit standard and unit standards 2016, 29419, and 29441 together meet the assessment requirements of ERAC CEPCs 21.
This unit standard and unit standards 29419, and 29441 together meet the assessment requirements of ERAC CEPCs 22.
This unit standard and unit standards 15844, and 29441 together meet the assessment requirements of ERAC EPCs 32.
This unit standard and unit standards 15844, 29427, and 29441 together meet the assessment requirements of ERAC EPCs 33.
This unit standard and unit standards 29419, 29441, and 29441 together meet the assessment requirements of ERAC EPCs 35.
- 3 Achievement of this unit standard alone does not entitle trainees to legally perform prescribed electrical work without supervision. Until registered and licensed under the Electricity Act 1992, trainees are assisting, and must work under supervision when carrying out prescribed electrical work.
- 4 Definitions
Cable – a single cable core or two or more cable cores laid together, either with or without fillings, reinforcement, or protective coverings.
CEPC – Critical Essential Performance Capability.
EPC – Essential Performance Capability.

ERAC – Electrical Regulatory Authorities Council.

EWRB – Electrical Workers Registration Board.

Flexible cord – a flexible cable in which no wire exceeds 0.31 mm diameter and no conductor of which exceeds 4 mm² cross-sectional area, and having not more than five cores.

HO-FR – heat and oil resisting and flame retardant.

Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.

PCP – polychloroprene compound.

PVC – polyvinyl chloride.

Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.

TPS – tough plastic sheath.

TRS – tough rubber sheath.

XLPE – cross-linked polyethylene.

SWA – steel-wire armoured.

LV – low voltage.

ELV – extra low voltage.

a.c. – alternating current.

d.c. – direct current.

5 Range

- a Candidates may refer to current legislation and Standards during assessment.
- b Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
- c All activities and evidence presented for all outcomes and performance criteria in this unit standard must be in accordance with:
 - i legislation;
 - ii policies and procedures;
 - iii ethical codes;
 - iv Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010;
 - v applicable site, enterprise, and industry practice; and,
 - vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of six flexible cords and cables.

Performance criteria

- 1.1 Describe flexible cords and cables in accordance with manufacturers' specifications in terms of their construction, and environmental limitations and state at least one application for each type.
- 1.2 Describe the effects of conductor length, cross-sectional area, segregation of parallel runs and ambient temperature on the current-carrying capacity of flexible cords and cables.

- 1.3 Identify conductor names, abbreviations, and colour codes of single-phase and three-phase flexible cords and cables.
- 1.4 Outline the requirements of fire cell penetrations.
- 1.5 Interpret terminal abbreviations found on single-phase and three-phase flexible cord and cable accessories.
- 1.6 Select flexible cords and cables to match four given practical applications from data.

Outcome 2

Identify flexible cords and cables and their characteristics.

Performance criteria

- 2.1 Identify types of flexible cords and cables by sight.
- 2.2 Determine conductor size for an assortment of common flexible cords and fixed wiring cables by sight, compare with known cables by interpretation of markings on cable or cable drum, or by measurement.
- 2.3 State the characteristics unique to each type of flexible cords and cables and give a typical application for each.
- 2.4 State the restrictions on the use of different type of cables.

Range single insulation, TPS, XLPE, screened, SWA.

Outcome 3

Select flexible cords and cables, connect to appliances, and test connections.

Range single-phase plug-in appliance; three-phase plug-in appliance.

Performance criteria

- 3.1 Confirm the appliance isolated from the supply.
- 3.2 Select flexible cords and cables to match the appliances with consideration to the environment.
- 3.3 Terminate at the appliance.
- 3.4 Visually inspect connections for soundness and carryout electrical testing of earth continuity, polarity, and insulation resistance and document results.

Outcome 4

Identify and select two cables for mains or submains circuits.

Performance criteria

- 4.1 Identify and select cables for mains or submains with consideration for current carrying capacity, short circuit capacity, maximum demand and voltage drop, for single-phase and three-phase installations including multiple installations, environment.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 July 2016	31 December 2027
Revision	2	16 March 2017	31 December 2027
Review	3	25 May 2023	31 December 2027

Consent and Moderation Requirements (CMR) reference

0003

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.