

Title	Prepare for, install, test, and commission new electrical installations		
Level	4	Credits	10

Purpose	<p>This unit standard covers all aspects of a complete new small electrical installation. It includes planning, cabling, fitting-off, testing, and commissioning, and is intended for people wishing to become electricians.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – prepare for electrical installations; – install wiring and electrical fittings and appliances for electrical installations; – install electrical switchboards; – terminate cables in electrical switchboard; and – test and commission electrical installations.
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Classification	Electrical Engineering > Electrical Installation and Maintenance
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Available grade	Achieved
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Guidance Information

- 1 This unit standard has been developed for learning and assessment on-job.
- 2 This unit standard and unit standards 2016, 29441, and 29469 together meet the assessment requirements of ERAC CEPC 21.
 This unit standard and unit standards 29441, and 29469 together meet the assessment requirements of ERAC CEPC 22.
 This unit standard and unit standards 5931, 5932, 15848, 15855, 29430, and 29480 together meet the assessment requirements of ERAC CEPC 23.
 This unit standard and unit standards 5931, 5932, 15848, 15855, 29430, 29440, 29471, and 29480 together meet the assessment requirements of ERAC CEPC 24.
 This unit standard and unit standards 15870, 29441, and 29480 together meet the assessment requirements of ERAC CEPC 27.
 This unit standard and unit standards 2021, 294781, and 29482 together meet the assessment requirements of ERAC EPC 29.
 This unit standard and unit standards 29441, 29469, and 29474 together meet the assessment requirements of ERAC CEPC 35.
 This unit standard and unit standards 5931, 5932, 15848, 15855, 29430, 29440, and 29474 together meet the assessment requirements of ERAC CEPC 37.
 This unit standard and unit standards 5931, 2016, 29430, and 29440 together meet the assessment requirements of ERAC CEPC 38.
 This unit standard and unit standards 29422, 29426, 29472, 29480, and 29481 together meet the assessment requirements of ERAC CEPC 41.

3 Definitions

EPC – Essential Performance Capability.

ERAC – Electrical Regulatory Authorities Council.

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)*.

4 Range

- a The candidate must effectively manage all steps, and must do much of the detailed work. Assistance by others in running cables and fitting-off is acceptable.
- b Evidence is required of three, one new and two existing, electrical installations with at least two different types of cable for fixed wiring.
- c Candidates may refer to current legislation and Standards during assessment.
- d Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
- e 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

Prepare for electrical installations.

Performance criteria

- 1.1 Establish customer requirements and obtain or develop installation plans for the projects that indicate the position, type, and style of all openings and fittings.

Range	includes but is not limited to – lights, socket outlets, switches, permanently connected appliances, fixed wired appliances, switchboard, meter board, cable.
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- 1.2 Plan cable routes with consideration for the layout of the installations.
- 1.3 Use load requirements to determine cable sizes and protection needs.

Range	capacity of appliances, number of fittings, number of phases.
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- 1.4 Use installation plans and material lists to ascertain all equipment and fittings to be installed and prepare a schedule of materials for the installations.

- 1.5 Purchase or obtain from stores all equipment, fittings, and materials and assemble them on site in a safe and orderly manner and verify the quantities.
- 1.6 Establish and maintain working relationships with site management, customers, and other trades.
- 1.7 Comply with energy supplier requirements in terms of network application, inspection, and connection procedures.

Outcome 2

Install wiring and electrical fittings and appliances for electrical installations.

Performance criteria

- 2.1 Assemble materials on site in an orderly manner and verify quantities.
- 2.2 Install electrical fittings square and flush and securely attached using fastenings appropriate to the weight of the equipment and mounting materials.
- 2.3 Install and connect electrical cables to fittings and appliances.
- 2.4 Complete installation to customer requirements.
- 2.5 Leave the work site clean and tidy in accordance with customer's expectations and industry practice.

Outcome 3

Install electrical switchboards.

Performance criteria

- 3.1 Install switchboards in accordance with installation plans and ensure position, clearances, and accessibility complies with current regulations and Standards.
- 3.2 Mount and label equipment on the switchboards in accordance with installation plans, current regulations, and Standards.
- 3.3 Terminate cables and internal switchboard wiring in accordance with installation plans where available.
- 3.4 Visually examine cables for damage and check circuits, before closing-in or lining of building or system where appropriate.

Outcome 4

Terminate cables in electrical switchboard.

Performance criteria

- 4.1 Terminate switchboard cables in accordance with installation plans where available.
- 4.2 Connect switchboard internal wiring in accordance with installation plans where available.

Outcome 5

Test and commission electrical installations.

Performance criteria

- 5.1 Test to confirm that all requirements of current regulations and standards are met and that the installation is safe to connect to the supply.
- 5.2 Arrange for the completion of a certificate of compliance by a registered tradesperson.
- 5.3 Coordinate the connection of the electrical installations to the mains.
- 5.4 Commission the installation.
- 5.5 Ensure the installation meets customer requirements.
- 5.6 Verify and demonstrate the operation of appliances and fittings to the customer.
- 5.7 Complete all documentation including as-built drawings and compliance documents.
- 5.8 Ensure that the work site is left clean and tidy in accordance with customers' expectations.

Replacement information	This unit standard replaced unit standard 16408, unit standard 16409, and unit standard 16410.
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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	24 March 2022	31 December 2027
Rollover and Revision	4	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>.