

Title	Install, wire, test and fault-find, and repair power outlets and electric lighting systems in existing installations		
Level	4	Credits	7

Purpose	<p>This unit standard covers the installation of power outlets and lighting systems in existing installations and is intended for people who wish to qualify as electricians or electrical service technicians.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – plan installation of power outlet and electric lighting systems; – install and wire power outlets; – install and wire electric lighting systems and control circuitry; – test and commission installed power outlets and electric lighting systems; – fault-find and repair electrical installations; and – re-commission electrical installations.
----------------	--

Classification	Electrical Engineering > Electrical Installation and Maintenance
-----------------------	--

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 This unit standard has been developed for learning and assessment on-job.
- 2 This unit standard and unit standards 29419, 29426, 29472, 29480, and 29481 together meet the assessment requirements of ERAC EPC 41.
 This unit standard and unit standards 5926, 29431, 29434, 29471, 29475, 29481, and 29482 together meet the assessment requirements of ERAC EPC 51.
 This unit standard and unit standards 29472, 29476, and 29481 together meet the assessment requirements of ERAC EPC 53.
 This unit standard and unit standards 15848, 29420, 29421, 29443, 29444, 29481, 29483, and 29557 together meet the assessment requirements of ERAC CEPC 54.
- 3 Definitions
CEPC – Critical Essential Performance Capability.
EPC – Essential Performance Capability.
ERAC – Electrical Regulatory Authorities Council.
EWRB – Electrical Workers Registration Board.
IP – ingress protection.
RCD – residual current device.

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 number of installations and type of power outlets and lighting systems chosen are left to the discretion of the assessor, but must be sufficient to assess competence in all outcomes of the unit.
- b The candidate must effectively manage all steps, and do much of the detailed work. Assistance by others in running cables and fitting-off is acceptable.
- 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

Plan installation of power outlet and electric lighting systems.

Performance criteria

1.1 Determine customer's requirements.

Range cable size, circuit protection and provisioning, lux levels.

1.2 Plan and prepare a location diagram to advise customer of the most suitable arrangement including IP rating requirements.

Outcome 2

Install and wire power outlets.

Performance criteria

2.1 Install power outlet cabling.

2.2 Install power outlets square and flush and ensure they are securely attached using fastenings appropriate to the weight and design of the fitting and the material of the mounting.

2.3 Position and connect power outlets in accordance with the location diagram.

Outcome 3

Install and wire electric lighting systems and control circuitry.

Performance criteria

3.1 Install light circuit cabling.

3.2 Position and install all fittings including lights and switches square and flush and attach using fastenings appropriate to the weight of the fitting and the material of the mounting in accordance with location diagram.

Outcome 4

Test and commission installed power outlets and electric lighting systems.

Performance criteria

4.1 Test power outlets and electric lighting systems.

4.2 Check power outlets and electric lighting systems for correct operation and commission systems.

4.3 Complete test documentation in accordance with current company requirements.

4.4 Advise customer of resetting requirements of RCD outlets if applicable.

Outcome 5

Fault-find and repair electrical installations.

Range power outlets, electric lighting systems.

Performance criteria

5.1 Use logical techniques and observation to analyse symptoms and where necessary, take electrical measurements to locate faults and/or faulty components.

5.2 Assess repair viability in terms of manufacturers' recommendations, component cost and availability, cost and time to repair, cost of equivalent replacement product, and supervisor or customer instructions.

5.3 Repair and test for electrical safety.

Outcome 6

Re-commission electrical installations.

Performance criteria

- 6.1 Re-commission electrical installations and ensure that the system is as close as possible to its original condition taking account of its age.
- 6.2 Test to confirm that all requirements of current regulations and Standards are met and that cabling and fittings are safe to reconnect to the mains.
- 6.3 Document re-commissioning in accordance with company requirements.

Replacement information	This unit standard replaced unit standard 15867 and unit standard 15868.
--------------------------------	--

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
Review	2	24 March 2022	31 December 2027
Rollover and Revision	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>.