

Title	Inspect, test, fault-find, and repair fixed-wired electrical appliances and portable appliances		
Level	3	Credits	3

Purpose	<p>This unit standard covers the repair of fixed-wired electrical appliances and portable electrical appliances. It is intended for people wishing to qualify as electricians, electrical service technicians, or appliance service persons.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – disconnect fixed wired appliances or equipment; – fault-find fixed-wired and portable electrical appliances; – repair and test fixed-wired and portable electrical appliances; – re-commission fixed-wired and portable electrical appliances; and – demonstrate and apply knowledge of portable appliance and electrical tool testing and tagging.
----------------	--

Classification	Electrical Engineering > Electrical Appliance Servicing
-----------------------	---

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

Prerequisites	<p>Critical health and safety prerequisites: For safety reasons it is recommended that competency in this unit standard should be assessed only after competency in the following unit standards has been achieved, or equivalent knowledge and skills demonstrated: Unit 750, <i>Demonstrate knowledge of electrical test instruments and take measurements</i>; Unit 15852, <i>Isolate and test low-voltage electrical subcircuits</i>; Unit 29465, <i>Apply knowledge of electrical safety and safe working practices for electrical workers</i>; Unit 29477, <i>Demonstrate knowledge of the New Zealand national electricity grid and associated electrical protection</i>; Unit 29480 <i>Demonstrate knowledge of electric circuit design, control, and protection</i>; and hold a current First Aid certificate.</p>
----------------------	--

Guidance Information

- 1 This unit standard has been developed for learning and assessment on-job under adequate supervision as defined in the Electricity Act 1992, and Electrical Workers Registration Board, *Supervision Procedures for Trainees*, (2010) available at EWRB - Publications.
- 2 This unit standard and unit standard 15852 29468 together meet the assessment requirements of ERAC CEPC 31.
This unit standard and unit standards 29465, and 29479 together meet the assessment requirements of ERAC EPC 45.
This unit standard and unit standards 15848, 29420, 29422, 29443, 29444, 29481, 29483, and 29557 together meet the assessment requirements of ERAC CEPC 54.
- 3 **Definitions**
Electrical equipment – wiring systems, switchgear, controlgear, accessories, appliances, luminaires and fittings used for such purposes as generation, conversion, storage, transmission, distribution or utilization of electrical energy.
Electrical technicians and service persons – for the purposes of this unit standard means, people who hold or who are working towards electrical registration as an Electrical Service Technician or Electrical Appliance Serviceperson (endorsed to disconnect and connect).
CEPC – Critical Essential Performance Capability.
EPC – Essential Performance Capability.
ERAC – Electrical Regulatory Authorities Council.
EWRB – Electrical workers Registratoin board.
Fixed-wired appliances – appliances that connect to a power source directly without the use of a plug and socket.
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 Evidence is required of three different types of fixed-wired electrical appliances and two different types of portable electrical appliances.
 - b Candidates may refer to current legislation and Standards during assessment.
 - c Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
 - d 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

Disconnect fixed wired appliances or equipment.

Performance criteria

- 1.1 Apply electrical safe working practices relating to the isolation and disconnection of the supply and apply correct lockout and tag out procedures.
- 1.2 Where appropriate, document motor and/or phase rotation.
- 1.3 Test appliance or equipment to verify all live conductors are isolated.
- 1.4 Disconnect appliance or equipment from the supply and make exposed wiring safe.

Outcome 2

Fault-find fixed-wired and portable electrical appliances.

Performance criteria

- 2.1 Carry out inspections for faults and/or indications of faults.
- 2.2 Use logical techniques to analyse symptoms and where necessary, take electrical measurements to locate faults and/or faulty components, and where available, follow manufacturers' procedures.
- 2.3 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.

Outcome 3

Repair and test fixed-wired and portable electrical appliances.

Performance criteria

- 3.1 Repair fixed-wired appliance.
- 3.2 Ensure any replacement components and cables are fit for purpose.

Outcome 4

Re-commission fixed-wired and portable electrical appliances.

Performance criteria

- 4.1 Carry out electrical, mechanical, and visual safety tests and checks and label equipment as tested.
- 4.2 Reconnect supply.
- 4.3 Carry out operational tests, and where relevant or necessary adjustments, to ensure that the appliances perform in accordance with manufacturers' specification.
- 4.4 Document re-commissioning in accordance with company requirements.
- 4.5 Test to confirm that all requirements of current regulations and Standards are met and that the appliances are safe to connect to the power supply.

Outcome 5

Demonstrate and apply knowledge of portable electrical appliance testing and tagging.

Performance criteria

- 5.1 Explain the reasons for and the requirements of testing and tagging portable electrical appliance.
- 5.2 Describe the procedures for testing and tagging portable electrical appliance.
- 5.3 Describe the testing and tagging documentation requirements.
- 5.4 Carry out testing and tagging of portable electrical appliance.
- 5.5 Complete testing and tagging documentation.

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>.