Title	**Demonstrate and apply knowledge of electrical fittings and components and their installation**		
Level	**3**	**Credits**	**6**

Purpose	This unit standard is intended for people in the electrical and related trades, who need to be able to select and install electrical fittings and components. People credited with this unit standard are able to: – demonstrate knowledge of electrical fittings and components and their uses – identify electrical accessories and their applications – demonstrate knowledge of electrical appliances – install and connect electrical fittings, components, and appliances and test for safety and operation.

Classification	Electrical Engineering > Electrical Installation and Maintenance

Available grade	Achieved

Guidance Information

1 This unit standard has been developed for learning and assessment off-job or on-job.

2 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.

3 Definitions
AC – alternating current.
DC – direct current.
IP – ingress protection.
Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.
PIR – passive infrared.
Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000 (version as cited by the Electricity (Safety) Regulations) *Electrical Installations (known as the Australian/New Zealand Wiring Rules).*

4 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
   vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of electrical fittings and components and their uses.

Performance criteria

1.1 Define the terms electrical fittings and components and give six examples of fittings used in electrical work.

1.2 Describe the limitations on the use of fittings and components.

Range current limits, voltage limits, IP ratings, unsuitability of certain switches for purposes of circuit isolation, position of switches in circuits.

1.3 Describe mounting and support requirements for fittings and components in terms of fixings and environment.

1.4 Describe cable support systems in terms of type, construction, load bearing, and mounting systems.

1.5 Outline building materials and summarise in terms of strength for mounting and fire rating.

1.6 Describe the requirements for the installing, terminating and testing of catenary supported cables, pendant-type socket outlets and trailing cables.

1.7 Explain requirements for earthing and bonding of electrical equipment and outline how they can be achieved.

Outcome 2

Identify ten electrical accessories and their applications.

Range may include but is not limited to – toggle, rocker, push-button, pull-cord, single-pole, double-pole, intermediate, one-way and two-way switches and switch mechanisms, timers, time delay switches;
light dimmers – one-gang, two-gang;
flush box, surface box, permanent connection unit, socket outlet (power point), junction box;
watertight, hose-proof, weather-protected accessories;
batten holder, recessed light (down-light), pendant and ceiling rose, bayonet-cap and Edison-screw lamps, strip light, fluorescent light, fluorescent light starters;
PIR sensors.

Performance criteria

2.1 Identify electrical accessories.

Range identification could be by any one of the following – description, pictorial display, physical display.

2.2 Identify an application for each accessory in accordance with manufacturers' specifications.

Outcome 3

Demonstrate knowledge of electrical appliances.

Performance criteria

3.1 Define the term electrical appliance.

3.2 Explain the general operating principles of appliances in terms of input, control and power circuits, protection, and output.

Outcome 4

Install and connect electrical fittings, accessories, and appliances and test for safe operation and compliance.

Performance criteria

4.1 Follow manufacturers' specifications and installation instructions to install and connect three different electrical fittings and three different accessories.

4.2 Test fittings, connections, and components for safety and operation, document test results, and compare test results with expected results.

4.3 Follow manufacturers' specifications, and installation instructions, and declaration of conformity to install and connect two different electrical appliances.

4.4 Test appliances and connections for safe operation and compliance, document test results, and compare test results with expected results.

4.5 Complete compliance documentation.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 July 2016	N/A
Rollover and Revision	2	25 May 2023	N/A

Consent and Moderation Requirements (CMR) reference	0003

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 qualifications@WaihangaAraRau.nz if you wish to suggest changes to the content of this unit standard.