

Title	Isolate low-voltage electrical subcircuits and perform basic checks and tests to confirm isolation		
Level	2	Credits	1

Purpose	<p>This unit standard is part of a suite of standards used for introductory safety training for any person intending to work at a site where there are potential electrical hazards.</p> <p>This unit standard also contributes to the EWRB requirements for award of the Trainee Limited Certificate (TLC), which all people training towards an electrical licence must hold. Requirements to meet the TLC must be completed within the first three months of an apprenticeship or traineeship.</p> <p>This unit standard does not cover testing of complete installations, nor testing in specialist areas such as work on overhead power lines, high voltage systems, or works as defined in the Electricity Industry Act 2010.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – isolate electrical circuits from the supply of electricity; and – carry out basic checks and tests to confirm circuit isolation.
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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 does not require testing to ensure the circuit is electrically safe, as defined in the Electricity (Safety) Regulations 2010. Refer to definition of electrically safe below.
- 3 The suite of unit standards to meet the requirements for the TLC include this unit standard and unit standards:
 - 6401, *Provide first aid*,
 - 6402, *Provide basic life support* and
 - 30658, *Demonstrate knowledge of fundamental electrical safety in the workplace* or demonstration of equivalent skills and knowledge.

This unit standard can lead to unit standard 15852, *Isolate and test low-voltage electrical subcircuits*.

- 4 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.
- 5 Definitions
- Electrically safe* – as defined in the Electricity (Safety) Regulations 2010, means, in relation to works, installations, fittings, appliances, and associated equipment, that there is no significant risk that a person or property will be injured or damaged by dangers arising, directly or indirectly, from the use of, or passage of electricity through, the works, installations, fittings, appliances, or associated equipment. It is required that circuits are electrically safe when carrying out prescribed electrical work and requires thorough testing to AS/NZS 3000 section 8. Only a licensed electrical worker or a trainee electrical worker may carry out this work. There is also compliance documentation required for works, installations, fittings, appliances, and associated equipment to be deemed electrically safe. This is specified in unit standard 15852 but is beyond the scope of this unit standard.
- EWRB* – Electrical Workers Registration Board.
- Industry practice* – those practices that competent practitioners within the industry recognise as current industry best practice.
- 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)*.
- 6 The *prove-test-prove* method refers to proving the instrument before and after a test to ensure that it works properly, and is particularly important when confirming electrical isolation. Some instruments have fused leads and may give false indication of isolation if the fuse is open circuit or blows during the test. Proving is done by applying the instrument to a circuit that is known to be energised and observing the measured voltage, testing the circuit to be isolated to ensure it is in fact isolated, then proving the instrument again on a circuit that is known to be energised.
- 7 Range
- Assessment for this unit standard is to ensure the electrical circuit is disconnected and safe to work on or around.
 - Electrical circuits may include but are not limited to one of – lighting circuit, socket outlet, fixed wired appliance.
 - Candidates may refer to current legislation and Standards during assessment.
 - Demonstration of safe working practices in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
 - All activities and evidence presented for all outcomes and evidence requirements in this unit standard must be in accordance with:
 - legislation;
 - policies and procedures;
 - ethical codes;
 - Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010;
 - applicable site, enterprise, and industry practice; and,
 - where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Isolate electrical circuits from the supply of electricity.

Performance criteria

- 1.1 Identify circuit as subcircuit or submains, and single-phase, two-phase, or three-phase.
- 1.2 Switch off load and give reasons for doing so.
- 1.3 Identify switch, fuse, or circuit breaker at the switchboard and isolate the supply.
- 1.4 Apply safety tag, padlock, or disconnection isolator where appropriate.

Outcome 2

Carry out basic checks and tests to confirm circuit isolation.

Performance criteria

- 2.1 Explain test-before-touch and the principles of prove-test-prove with reasons for their importance in working safely.
- 2.2 Verify safety tag/lock out system or equivalent methods have been used correctly on the circuit being tested.
- 2.3 Use a voltage tester and the prove-test-prove method to confirm the circuit is isolated.

Range earth to phase, neutral to phase, phase to phase (where appropriate).

Planned review date	31 December 2019
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	dd MMMM yyyy	N/A

Consent and Moderation Requirements (CMR) reference	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact The Skills Organisation at reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.