<table>
<thead>
<tr>
<th>Title</th>
<th>Isolate and test low-voltage electrical subcircuits</th>
</tr>
</thead>
<tbody>
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<td>Level</td>
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**Purpose**

This unit standard is designed to meet the requirements of first-time tuition in safety testing for electricians as required by the Electrical Workers Registration Board. It 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.

People credited with this unit standard are able to:
- isolate electrical circuits from the supply of electricity; and
- test electrical circuits to ensure safety prior to reconnection.

**Classification**

Electrical Engineering > Core Electrical

**Available grade**

Achieved

**Explanatory notes**

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

2. Achievement of this unit standard does not by itself imply that trainees may legally perform prescribed electrical work in their own right. Until they are registered and licensed under the Electricity Act 1992, trainees are assisting, and must work under the supervision of a Supervisor of Electrical Work when carrying out prescribed electrical work. If the prescribed electrical work in question is carried out for reward the Supervisor of Electrical Work must hold a valid practising licence.

3. References
   - Electricity Act 1992;
   - Electricity Industry Act 2010;
   - Electricity (Safety) Regulations 2010;
   - Health and Safety in Employment Act 1992;
   - AS/NZS 3000:2007, *Electrical installations (known as the Australian/New Zealand Wiring Rules)*, including Amendment 1;
   - and all subsequent amendments and replacements.

4. Definition
   - The term *current regulations and standards* is used in this unit standard to refer to the requirements of the above references.
5 For coverage of knowledge and skill relating to testing of electrical appliances refer to unit standard 6705. Coverage of knowledge and skill relating to testing of complete electrical installations is covered in unit standards 15866 and 15870.

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
   a Electrical circuits – lighting circuit, power outlet, fixed wired appliance.
   b Demonstration of safe working practices in accordance with safe and sound practice are essential components of assessment of this unit standard.

Outcomes and evidence requirements

Outcome 1
Isolate electrical circuits from the supply of electricity.

Evidence requirements

1.1 The test-before-touch and the prove-test-prove principles are explained with reasons for their importance in working safely.

1.2 Circuit is identified as subcircuit or submains, and single-phase, two-phase, or three-phase.

1.3 Load is switched off and reasons for doing so are given.

1.4 Switch, fuse, or circuit breaker is identified at the switchboard and the supply disconnected.

1.5 Safety tag, padlock, or disconnection isolator where appropriate, is applied.

1.6 Isolation is confirmed by tests using the prove-test-prove method.

   Range tests – phase to neutral, phase to phase where appropriate, phase to earth.

Outcome 2
Test electrical circuits to ensure safety prior to reconnection.

Evidence requirements

2.1 Checks and tests to prove isolation are demonstrated.
2.2 Visual inspection confirms absence of unsafe conditions such as exposed wires, contacts, mechanical faults, and loose connections in accordance with current regulations and standards.

2.3 Circuit tests confirm that the circuit is electrically safe in accordance with current regulations and standards.

Range tests – earth continuity, insulation resistance, polarity, correct circuit connections.

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**Replacement information**

This unit standard and unit standard 15851 replaced unit standard 1179.

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**Planned review date**

31 December 2014

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### Status information and last date for assessment for superseded versions

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<th>Process</th>
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**Consent and Moderation Requirements (CMR) reference**


**Please note**

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.
Comments on this unit standard

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