

<b>Title</b>	<b>Fault-find, repair, and test portable electrical tools and appliances</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	<p>This unit standard covers all aspects of servicing portable electrical tools and appliances, and is for people wishing to qualify in appliance servicing, or as electricians or electrical technicians.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> <li>– fault-find portable electrical tools and appliances;</li> <li>– repair portable electrical tools and appliances; and</li> <li>– test portable electrical tools and appliances.</li> </ul>
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<b>Classification</b>	Electrical Engineering > Electrical Appliance Servicing
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<b>Available grade</b>	Achieved
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<b>Prerequisites</b>	<p>For safety reasons, 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:</p> <p>Unit 750, <i>Demonstrate knowledge of electrical test instruments and take measurements</i>;</p> <p>Unit 1204, <i>Demonstrate knowledge of earthing</i>, or Unit 17806, <i>Demonstrate knowledge of protection from the harmful effects of electricity</i>, and Unit 15856, <i>Demonstrate knowledge of the New Zealand electricity supply system</i>;</p> <p>Unit 6705, <i>Test electrical appliances for safety</i>, or Unit 17804, <i>Test single-phase electrical appliances</i>;</p> <p>Unit 15848, <i>Demonstrate knowledge of safeguards for use with portable electrical appliances</i>;</p> <p>Unit 15851, <i>Demonstrate knowledge of electrical safety and safe working practices for electrical workers</i>;</p> <p>Unit 15852, <i>Isolate and test low-voltage electrical subcircuits</i>; or Unit 17799, <i>Demonstrate knowledge of testing for electrical safety for electrical appliance servicing – single-phase</i>;</p> <p>Unit 15855, <i>Demonstrate knowledge of circuit protection</i>, or Unit 17802, <i>Replace fuses and plug-in miniature circuit breakers</i>, and Unit 17806, <i>Demonstrate knowledge of protection from the harmful effects of electricity</i>;</p> <p>Unit 26551, <i>Provide first aid for life threatening conditions</i>;</p> <p>Unit 26552, <i>Demonstrate knowledge of common first aid conditions and how to respond to them</i>.</p>
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## 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.
- 2 Competency under this unit standard does not entitle the candidate to legally perform prescribed electrical work without adequate supervision until the candidate has been registered and licensed under the Electricity Act 1992.
- 3 References  
Electricity (Safety) Regulations 2010;  
Electricity Act 1992;  
Health and Safety in Employment Act 1992, and associated regulations;  
*New Zealand Electrical Codes of Practice* (Ministry of Business, Innovation and Employment, ISSN 0114-0663);  
AS/NZS 3760:2010, *In-service safety inspection and testing of electrical equipment* including Amendment 1;  
AS/NZS 5762:2011, *In-service safety inspection and testing – Repaired electrical equipment*;  
and all subsequent amendments and replacements.
- 4 Definition  
*Current regulations and standards* – refers to the requirements of the above legislation, standards, and codes, applied to the context in which the term is used.
- 5 Performance in relation to the outcomes of this unit standard must comply with the *Health and Safety in Employment Act 1992*, and any applicable company safety and health procedures.
- 6 Range  
Typical portable electrical tools – sanders, drills, skill saws, grinders, soldering irons.  
Typical portable electrical appliances – heaters, fans, concrete mixers, sewing machines, kitchen machine, jugs, toasters, irons, water blasters, spray painting machines.  
Evidence is required of three portable electrical tools and three portable appliances with genuine faults.

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## Outcomes and performance criteria

### Outcome 1

Fault-find portable electrical tools and appliances.

### Performance criteria

- 1.1 Tool or appliance is visually inspected for faults.
 

Range	typical symptoms and faults – worn, loose or damaged accessories; imprecise movement of switches, tool height or depth adjustment devices, damaged or deformed flexible cords, damaged casings, rattling; indications of overheating such as deformed casing, discolouration, melting, burnt insulation smell.
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- 1.2 Fault-finding demonstrates a logical technique for analysing symptoms and making electrical measurements where necessary, to locate fault and/or faulty components.
- 1.3 Viability of repair is assessed, taking into account component availability, cost and time of repair, cost of equivalent new appliance, and supervisor or customer instructions.

## **Outcome 2**

Repair portable electrical tools and appliances.

### **Performance criteria**

- 2.1 Repair restores the tool or appliance to fully serviceable condition.
- 2.2 Replacement wiring matches the original in terms of length, type, current rating, insulation voltage and temperature rating, and rigidity or flexibility.

## **Outcome 3**

Test portable electrical tools and appliances.

### **Performance criteria**

- 3.1 Testing confirms that all requirements of current regulations and standards have been met, and that the tool or appliance is safe to connect to the mains.
- 3.2 Testing includes powering-up and verifying operation according to design parameters of the tool or appliance.
- 3.3 Test results are documented according to company requirements.

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**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	29 April 1994	31 December 2013
Review	2	23 April 1996	31 December 2013
Review	3	28 June 1999	31 December 2013
Review	4	28 January 2001	31 December 2013
Revision	5	3 April 2001	31 December 2013
Review	6	20 June 2006	31 December 2022
Rollover and Revision	7	20 September 2012	31 December 2022
Revision	8	15 January 2014	31 December 2022
Review	9	28 January 2021	31 December 2022

**Consent and Moderation Requirements (CMR) reference**

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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.