

## Section 4.14

### Electrical Safety

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#### 1. Purpose

*The purpose of this procedure is to ensure guidelines are in place for testing of electrical equipment to ensure safety of persons using the equipment.*

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#### 2. Scope

The procedures apply in all Council workplaces and to all equipment capable of being activated by electrical energy sources through a flexible lead including microwave radiation of microwaves.

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#### 3. References

Occupational Health and Safety Act 2004

Australian Standard AS/NZS 3760:2001 – In Service Safety inspection and testing of electrical equipment.

Australian Standard AS60335.2.25 – Microwave Radiation Levels.

National Health and Medical Research Council Standards.

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#### 4. Responsibilities

##### Employees

Employees shall ensure that they:

- Inspect electrical cords and plugs prior to use.
- Report damaged electrical cords immediately to their Manager/Supervisor.

##### Managers/Supervisors/Health and Safety Representatives (HSRs)

Managers/Supervisors/Health and Safety Representatives are responsible for ensuring that items of equipment are properly de-energised, locked out and/or tagged when the equipment is deemed unsafe for operation or requires maintenance.

Any equipment that is purchased second-hand should be tested before use.

##### Building Maintenance Officer / Relevant Managers

The Building Maintenance Officer shall co-ordinate through the Essential Services Scheduling Programme that all relevant electrical equipment is tested and tagged according to the Standards Testing and Inspection Intervals by a competent person with the appropriate training/skills.



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## **5. Definitions**

### **Class 1 Equipment (basic insulated, protectively earthed equipment)**

Equipment in which protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution, in that conductive accessible parts are connected to the protective earthing conductor in the fixed wiring of the installation in such a way that those accessible parts cannot become live in the event of a failure of the basic insulation. (Equipment intended for use with a flexible cord or cable includes a protective earthing conductor as part of the flexible cord or cable)

### **Class 11 Equipment (Double insulated equipment)**

Equipment in which protection against electric shock does not rely on basic insulation only, but in which additional safety, precautions, such as double insulation or reinforced insulation are provided, there being no provision for protective earthing or reliance upon installation conditions.

### **Competent person**

A person, who the person in charge of the premises ensures has acquired through training, qualification, experience or a combination of these, the knowledge and skill enabling that person to perform the task required correctly.

### **Cord Extension Set (Extension Lead)**

An assembly of a plug intended for connection to a mains outlet socket, a sheathed flexible cord and a cord extension socket.

### **Electric Portable outlet device (Powerboard)**

A device, other than a cord extension set, having a single plug intended for connection to a mains outlet socket, a sheathed flexible cord and an assembly of one or more sockets. It may incorporate a reeling or coiling arrangement.

### **Exposed Metal**

A conductive part of electrical equipment which:

- Can be touched with the jointed test finger as specified in AS 1939; and
- Is not a live part but can become live if basic insulation fails

Exposed metal parts are required to be connected to a protective earth.

### **Fixed Equipment**

Equipment which is fastened to a support or otherwise secured in a specific location.(i.e. larger machines such as presses or similar equipment which are bolted to the floor and cannot be easily moved.)



**Flexible supply cord**

A flexible cable or cord, for supply purposes, which has one end connected to a plug with pins designed to engage with a socket outlet and the other end either –  
Connected to terminals within the equipment or  
Fitted with a connector designed to engage with an appliance inlet fitted to the equipment. (Kettles, toasters, angle grinders, power tools, welders etc)

**Residual current device (RCD)**

A mechanical switching device designed to make, carry or break currents under normal service conditions and to cause the opening of the contacts when the residual current attains a given value under specified conditions.

**Radiation Leakage Inspection (Microwave)**

Measuring of the power density of microwave radiation emerging around the oven to ensure they are below the limits specified in the Standards.

**Microwave – Power output)**

Testing wattage of the oven to ensure that the electrical flow and magnetron of the unit are operating at full potential

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**6. Method**

**6.1. Frequency of Inspection and Testing**

The Building Maintenance Officer/Manager shall coordinate the frequency of Inspections and testing according to the Essential Services Register.

- Where the equipment is new, the supplier shall be deemed responsible for the initial electrical safety of the equipment.
- Before return to service after a repair or servicing, which could have affected the electrical safety
- Prior to each hire (for hire equipment, inspection only) and additionally tested at not greater than monthly intervals – See Table 2 AS/NZ 3760:2001

**6.2. Inspection and Testing**

Inspection shall be carried out at the intervals specified in Table 2 AS/NZ 3760:2001.



Summary extract from table AS/NZ 3760:2001(Relevant to Council Operations) – refer standards for full Table and RCD devices.

Environment/Equipment	Class 1 (Protectively earthed)	Class 11 (Doubled Insulated)
Factories, <i>workshops, places of work or repair manufacturing, assembly, maintenance or fabrication</i>	6 Months	12 Months
Laboratories, health care and educational establishments, <i>tea rooms and office kitchens</i>	12 Months	
<b>Office Environment:</b> Where the equipment or supply cord is subject to flexing in normal use <b>OR</b> is open to abuse <b>OR</b> is in a hostile environment	12 Months	12 Months
<b>Office Environment:</b> Where the equipment or supply cord is <b>NOT</b> subject to flexing in normal use and is <b>NOT</b> open to abuse and is <b>NOT</b> in a hostile environment	5 Years	5 Years
Hire Equipment	Inspect before each hire Test Monthly	Inspect before each hire Test Monthly
Repaired/serviced/second hand equipment	After repair or service which could effect electrical safety or on reintroduction to service	After repair or service which could effect electrical safety or on reintroduction to service
Equipment used for commercial cleaning	6 Months	12 Months

There is no reference to testing of portable RCDs as per requirements set out in AS 3760 (Table 1, Table 2 and Section 2.3.3.4). If you use these portable RCDs, we would recommend that the relevant Sections of AS 3760 be included in this Policy.



### **6.3. Action resulting from Inspection and testing**

#### **Non Compliant Equipment**

Where in-service inspection or testing identifies equipment which fails to comply with the criteria given in this Standard, the equipment shall:

- Withdrawn from service immediately, have a label attached to it warning against further use and have plug cut off.
- Sent for repair, disposal or destruction by an authorised repair agent or service personnel

#### **Compliant Equipment**

Following in-service inspection and testing, compliant equipment shall be fitted with durable, non-reusable, non metallic tag.

New equipment in accordance with the Standards, (Clause 2.1(a) need not be inspected or tested, but shall be tagged, and the tag will be marked with the date prior to introduction to service.

The tag, which may be colour coded to identify the period in which the test was performed, shall include:

- The name of the person or company who performed the tests: and
- The test or re-test date

### **6.4. Documentation**

The Building Maintenance Officer/Managers shall keep records of test and inspection, all the following should be recorded;

- Register of all Equipment
- Record of formal inspection and tests
- A repair register
- A record of all faulty equipment.

A record of testing and results shall be maintained by the Officer.

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## **7. Related Documents**

1. Section 3.06 Hazard Identification
2. Section 4.04 Equipment Isolation and Tag Out