

# Electrical Safety Management

## Information Sheet – Electrical inspection and testing

### Purpose

The purpose of this information sheet is to provide guidance on electrical inspection and testing in accordance with the [WHS Regulations 2012 \(SA\)](#). Please refer to the HSW Handbook Chapter [Electrical Safety Management](#) (the Chapter) for the overarching responsibilities for electrical safety management.

### Q1 What has changed?

In 2020, SafeWork SA endorsed a revised Code of Practice [Managing electrical risks in the workplace](#). The revised Code has removed an exclusion for the testing of electrical equipment in lower-risk operating environments (such as an office, classroom etc). The testing of such equipment is now required.

### Q2 What electrical equipment do you need to visually inspect?

All electrical equipment in use in the workplace, should be visually inspected by the worker during normal use, to identify obvious damage, wear or other conditions that might make the electrical equipment unsafe.

Visual inspection may identify:

- obvious damage, defects or modifications to the electrical equipment, including accessories, connectors, plugs or cord extension sockets;
- discolouration that may indicate exposure to excessive heat, chemicals or moisture;
- damage to flexible cords/cables;
- damage to operating controls e.g. they are not secured, appropriately identified or broken;
- that covers, guards etc are not secured and not working in the manner intended by the manufacturer or supplier;
- that ventilation inlets and exhausts are obstructed
- the inappropriate use of double adaptors.

### Q3 What can I do if I do not have sufficient power points for the equipment I need?

The use of double adaptors is to be discouraged as it is not best practice and is banned in some states. We recommend they be replaced with a power board that has overload protection to protect against fire and electric shocks. Noting that care should be taken not to overload circuits as this will result in tripping out circuits that can potentially lead to delays in work being able to continue whilst waiting for an electrician to be available to reset the circuit.

Where the equipment is likely to remain in that position over the longer term, consideration should be given to a qualified electrician installing additional power points.

### Q4 What equipment do you need to electrically test?

**ALL** electrical equipment needs to be tested where the equipment is:

- supplied through an electrical socket outlet (i.e. plug in equipment, not hard wired); or
- used in an environment in which the normal use of electrical equipment exposes the equipment to operating conditions that are likely to result in damage to the equipment or a reduction in its expected life span (e.g. conditions that involve exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust.);
- or a Residual Current Device (RCD).

There are a few exceptions to the above allowed under the WHS Regulations 2012 (SA) Section 150 and the Code of Practice [Managing electrical risks in the workplace](#):

- New equipment that has never been put into use (other than second-hand equipment).  
The supplier is deemed responsible for initial electrical safety. Whilst new equipment does not need to be tested, it still needs to be examined for obvious damage and tagged (refer to Question 13).
- Unused electrical equipment that requires testing under the legislation.  
However, the untested equipment is to be stored in a locked area to prevent use and/or “lock out” labels/tags attached.

**For equipment that is supplied by cord set, both the cord set and equipment need to be tested and tagged separately.**

**Q5 When do you need to test – at what intervals – and can I vary this?**

Electrical equipment must be inspected and tested at the intervals outlined in the Appendix (Appendix B.2 of the Chapter).

The frequency for testing is only able to be varied by a responsible person (deemed as the Head of School/Branch in the Chapter) based on a documented risk assessment undertaken by a competent person. A competent person for the purposes of assessing timeframes for inspecting equipment is a licensed or registered electrician with experience in inspection and testing, including in the application of the [AS/NZS 3760 \(2010\) In-service safety inspection and testing of electrical equipment](#) (AS/NZS 3760).

**Q6 Who can conduct electrical tagging and testing?**

Electrical testing and tagging can only be conducted by a competent “Test & tag” qualified person. A competent person, for the purposes of carrying out inspection and testing of electrical equipment, described in WHS Regulation 150, is a competent person who is licenced or registered to perform electrical work under a law relating to electrical safety or occupational licencing. The person should also be competent to interpret the test results of any equipment they use. A person carrying out testing under AS/NZS 3760 could be required to be:

- A licensed or registered electrician (whichever applies); or
- A licensed electrical inspector; or
- A person who has successfully completed a structured training course and been deemed competent in the use of a pass-fail type portable appliance tester and the visual inspection of electrical equipment.

The University has a preferred test and tag service provider, eSafe. All external test and tag services will need to be booked through the preferred provider. Refer to [Procurement Services](#) and the [Information Sheet: Electrical Testing and Tagging using eSafe](#). Infrastructure will update their procedures to ensure all the requests for testing and tagging are directed to the University’s preferred supplier.

**Q7 How do I arrange testing of items?**

Your local area should already have an annual process in place to test items in accordance with the intervals in the Appendix. If you need to establish a process due to the expanded testing requirements of the Code of Practice [Managing electrical risks in the workplace](#), refer to the [Information Sheet: Electrical Testing and Tagging using eSafe](#).

**Q8 What about the testing of office equipment, photocopiers and kitchen items?**

All electrical equipment must be inspected and tested at the intervals outlined in the Appendix unless a documented risk assessment undertaken by a competent person supports other intervals.

Note that computing equipment that is leased within the testing intervals will not require testing. The supplier is deemed responsible for initial electrical safety and new equipment must be tagged in accordance with AS/NZS 3760 section 2.4.2.1. Centrally purchased equipment through Information Technology and Digital Services, Division of University Operations will be tagged prior to delivery.

**Q9 Does University of Adelaide equipment used at home require testing and tagging?**

Electrical equipment owned by the University that is used in the home will need to be tested and tagged. However, where the device is connected with a power cord using an AC/DC adapter, thereby ensuring the device is not powered by 240V, only the power cord and adapter need to be brought in for testing and tagging. Where a power cord is plugged directly from the GPO to the device, without an AC/DC adapter, the cord and device must be tested together.

**Q10 What testing is required for hire equipment?**

If you are using the electrical equipment hired out you should ensure that, for the period of the hire, the equipment meets all applicable inspection and testing requirements under the WHS Regulations and the Code of Practice [Managing electrical risks in the workplace](#). Responsibility for testing, inspection and tagging passes to the hiree.

**Q11 Does student’s electrical equipment need testing?**

The scope of the Chapter including responsibility for tagging and testing applies to:

- all workers who undertake University of Adelaide related activities, use University of Adelaide facilities and/or are employed or engaged by the University or affiliated with the University in any capacity; and
- the electrical equipment and electrical installations that are under the control of the University.

The University in maintaining its infrastructure, installing RCDs or requiring portable RCDs provides protection for other users of electrical equipment on University premises. Students’ electrical equipment, particularly standard equipment

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such as laptops, mobile phones and chargers would not require testing and tagging under the requirements of this Chapter. Students should not be bringing in other items of personal equipment for University purposes.

**Q12 What if my Head of School/Branch wants to test electrical items more frequently?**

It is a Head of School/Branch (or delegate) decision. The frequency outlined in the Appendix provide guidance, however additional testing may be conducted if the Head of School/Branch has any safety concerns.

**Q13 What if my Head of School/Branch wants to test electrical items but at a reduced frequency?**

If your Head of School/Branch wishes to test less often than the testing frequencies outlined in the Appendix then you need to seek the advice of a competent person under the WHS Regulations, based on a risk assessment. This advice, including the risk assessment must be kept in accordance with the University's records management requirements (Refer to Appendix E of the Chapter [Faculty/Division/School/Branch/Area Records](#)). A competent person for the purposes of assessing timeframes for inspecting equipment is a licensed or registered electrician with experience in inspection and testing, including in the application of the AS/NZS 3760.

**Q14 Do I need an electrical plant register?**

Requiring a comprehensive report from the supplier of the testing and tagging service should deliver the necessary information for this purpose such as name of person who carried out the testing, equipment description, asset bar code, location, outcome of the test, date of test, next test due date. A record of any testing must be kept in accordance with the University's records management requirements (refer to Appendix E of the chapter [Faculty/Division/School/Branch/Area Records](#)).

**Q15 What are the requirements for new electrical equipment?**

Brand new equipment that has never been put to use (i.e. other than second-hand equipment) does not have to be tested before first use. The supplier is deemed responsible for initial electrical safety. New equipment is to be examined for obvious damage and tagged in accordance with AS/NZS 3760 section 2.4.2.1 (stating that it is "new to service"; the date of entry into service; the date when the first electrical safety test is due; and that the equipment has not been tested). If equipment requires ongoing testing, then add it to the next testing schedule. Centrally purchased equipment through Information Technology and Digital Services, Division of University Operations will be tagged as above prior to delivery.

**Q16 I am not sure what the difference is between kinking/coiling/wrapping and crushing/crimping of an electrical cord?**

Kinking, coiling and wrapping are words which describes the actions that a person uses when packing up a cord for a laptop computer or a portable projector; it is a folding or coiling action and does not normally result in internal damage to the cord. Crushing and crimping are words which describes when physical damage is likely to occur to the cord e.g. when the cord is stuck in a door, exposed to traffic e.g. car or in a walkway; cut etc.

**Q17 What if a worker brings in personal electrical items from home?**

If it is for a one-off event then these items will not require testing, however if your building does not have RCD protection then you will be required to use a portable RCD that has been tested. If it is an item which will remain at work for any period of time, then it will be treated as second hand and therefore is to be tested and tagged before it is put into service. Contact [Infrastructure Branch](#) for enquiries on RCD protection.

**Q18 What if a student/staff member designs/creates their own electrical equipment?**

Any equipment created by a student or staff member must be certified safe by a competent person before being plugged into mains power, electrically inspected and tested and tagged before use. All students/staff members are required to be directly supervised by a registered electrical worker.

There are specific legislative requirements for designers and manufacturers of electrical equipment and installations under Sections 22 and 23 of the [WHS Act 2012](#) (electrical equipment includes any apparatus, appliance, cable, conductor, fitting, insulator, material, meter or wire that is used for controlling, generating, supplying, transforming or transmitting electricity at a voltage greater than extra-low voltage.)

**Q19 What are the requirements for maintaining electrical testing records?**

In accordance with the Code of Practice [Managing electrical risks in the workplace](#), you must ensure that a record of testing carried out on electrical equipment is kept until the electrical equipment is next tested, permanently removed from the workplace, or disposed of. A record of testing must specify the following:

- the name of the person who carried out the test;
- the date of the test;

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- the outcome of the test; and
- the date on which the next testing must be carried out.

The record may be in the form of:

- a tag attached to the electrical equipment tested;
- a logbook, database, register or similar kind of record.

Where a tag is used, it must be in accordance with AS/NS 3760 section 2.4.2.1 and be durable, water resistance, non-metallic, self-adhesive or well secured, incapable of re-use and have a bright distinctive surface.

Where a tag is not used you should ensure that tested electrical equipment is marked or labelled so that records of testing can clearly identify the relevant equipment.

**Q20 What is required for testing of residual current devices (RCDs)?**

All RCDs used at the workplace are to be tested by a competent person and records of all testing must be kept until the device is next tested or the device is permanently removed from use. This includes all RCDs used in all operating environments including non-portable (fixed) RCDs. If an RCD is tested and found to be faulty it must be taken out of service and replaced as soon as possible.

**Testing new portable RCDs**

A new portable RCD unit should be tested by pressing the “trip test” button to ensure the RCD is effective.

**Q21 What is required when inspecting and testing electrical equipment on construction and demolition sites?**

The person who is in control of the activity/carrying out the construction work must comply with [AS/NZS 3012: 2010 “Electrical installations – Construction and demolition sites.”](#) Further information about construction work can be found in the [Code of Practice: Construction Work](#).

**Q22 What is required when inspecting and testing electrical equipment in patient care areas?**

AS/NZS 3760 specifically excludes medical devices and electrical devices in patient care areas. For more information on these see [AS/NZS 3551:2012 “Management programs for medical equipment”](#) or [AS/NZS 3003:2018: Electrical Installations – patient areas](#).

**Q23 What happens if a visual inspection or electrical testing identifies that the equipment is unsafe?**

Where safety concerns are identified they should be reported to the Supervisor in control of the area/activity for follow-up. Any unsafe electrical equipment is to be disconnected or isolated from its electricity supply and not reconnected until it is repaired or tested and found to be safe or is replaced or permanently removed from use. The safety concern should be reported using the University’s [on-line reporting system](#) to ensure appropriate investigation and corrective action is taken.

**Q24 What if I require further information on electrical testing?**

If you require further information, please contact a member of the local [HSW Team](#).

**Authorisation**

Authorised by the Director HSW

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## ELECTRICAL INSPECTION AND TESTING: INTERVALS

### Indicative testing and inspection intervals for electrical equipment

In accordance with Table 4 [AS/NZS 3760 \(2010\) In-service safety inspection and testing of electrical equipment](#)

(Caution: This page must be read in conjunction with AS/NZS 3760 as a whole and particularly section 2.1)

#### Frequency of inspection and testing

The intervals for testing in [AS/NZS 3760 \(2010\)](#) are summarised in the table below. Testing is subject to a tolerance of two weeks.

Inspecting and testing of electrical equipment must be carried out by a [competent person](#).

#### Variations to the frequency for testing

The frequency for testing can only be varied by the Head of School/Branch based on a risk assessment. If substituting other periods other than those indicated below the documented risk assessment must be completed in accordance with the process specified in [AS/NZS ISO 31000 "Risk management guidelines"](#) and take into consideration any relevant legislative requirements or guidelines. The risk assessment option does not apply to equipment offered for hire.

Type of environment and/or equipment  (a)	Equipment including Class 1 equipment, Class II equipment, cord sets, cord extension sets and EPDs (See definitions)  (b)	Interval between inspection and tests			
		Residual current devices (RCDs)			
		Push-button test – by user		Operating time and push-button test	
		Portable (c)	Fixed (d)	Portable (e)	Fixed (f)
1) Factories, workshops, places of manufacture, assembly, maintenance or fabrication	6 months	Daily, or before every use, whichever is the longer	6 months	12 months	12 months
2) Environment where the equipment or supply flexible cord is subject to flexing in normal use or is open to abuse or is in a <a href="#">hostile environment</a>	12 months	3 months	6 months	12 months	12 months
3) Environment where the equipment or supply cord is not subject to flexing in normal use and is not open to abuse and is not in a <a href="#">hostile environment</a>	5 years	3 months	6 months	2 years	2 years
4) Residential type areas of boarding houses, halls, hostels accommodation houses and the like	2 years	6 months	6 months	2 years	2 years
5) Hire equipment Inspection	Prior to hire	Including push-button test by hirer prior to hire		N/A	N/A
6) Hire equipment Electrical testing	3 months	N/A		3 months	12 months
7) Repaired, serviced and second-hand equipment	After repair or service which could affect electrical safety, or on reintroduction to service. Refer to AS/NZS 5762.				

Note: Regulatory authorities, other Standards, workplace safety requirements or manufacturers' instructions may specify shorter or longer intervals appropriate to particular industries or specific types of equipment. Some regulatory jurisdictions limit the inspection and testing of electrical equipment to defined work activity or working environments. For example, construction work or equipment used in a hostile operating environment.

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