Electrical Inspection, Testing and Tagging Procedure

Objective

Faulty electrical appliances can cause electrical shocks, electrocutions and electrical fires. Electrical risks must be eliminated as far as reasonably practicable and if elimination is not practicable, the risks must be minimised so far as reasonably practicable.

Inspection, testing and tagging is a reasonably practicable method of minimising electrical risk and is a requirement under the Work Health and Safety (WHS) Regulations.

This procedure is to provide practical guidance for the proactive management of electrical safety in the workplace through the inspection, testing and tagging of electrical equipment in accordance with:

- Work Health and Safety (WHS) Regulation 2012;
- Code of Practice – Managing Electrical Risks in the Workplace

This procedure applies to all electrical equipment used in Hut workplaces.

It covers Hut sanctioned activities by all workers, visitors, and clients.

This procedure:

- is not intended to cover technical and complex electrical safety issues;
- does not cover specified industries e.g. construction work;
- does not cover electrical risks arising from overhead or underground electrical lines.

Legislative requirements

In accordance with the following WHS Regulations, The Hut must:

- Ensure that any unsafe electrical equipment at the workplace is disconnected (or isolated) from its electricity supply; and once disconnected (or isolated) is not reconnected until it is repaired or tested and found to be safe; or is replaced or permanently removed from use. Electrical equipment is unsafe if there are reasonable grounds for believing it to be unsafe.

- Ensure that electrical equipment is regularly inspected and tested by a competent person if:
    - the electrical equipment is supplied with electricity through an electrical socket outlet; and
    - 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, including conditions that involve exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust.

Electrical equipment that is new and unused at the workplace is not required to be tested, however, the Hut must ensure that the equipment is inspected for obvious damage before being used and the item must be recorded as to when it is due for its first testing.

A record of any testing carried out must be kept until the electrical equipment is next tested, or permanently removed from the workplace, or disposed of. The record of testing must specify the name of the person who carried out the testing; the date of the testing; the outcome of the testing; the date on which the next testing must be carried out; and may be in the form of a tag attached to the electrical equipment tested.

Untested electrical equipment not to be used

Ensure, so far as is reasonably practicable, that electrical equipment is not used if the equipment is required to be tested and has not been tested.

Inspection and Testing

A regular program of inspection, testing and tagging comprises:

- a visual check to ensure there are no obvious problems;
- a series of electrical tests to ensure the safety of the item;
- tagging of the equipment to indicate to users that the item has been identified as safe in accordance with AS/NZS 3760:2010 and when the item is due to be tested again;
- provision of a detailed Asset Register and Log Book.

Electrical Equipment

Risk Assessment

The electrical equipment to be tested and the frequency of testing are determined by a risk assessment which relates directly to:

- the environment in which the equipment is operated;
- the use to which the equipment is put.

The Hut Executive Officer is responsible for determining the electrical equipment to be

inspected, tested and tagged, the frequency of testing and for keeping testing records.

All Hut workers are required to assess electrical risks at the workplace. It is not the duty of an engaged contractor to undertake the risk assessment.

Regular visual inspection can identify obvious damage, wear or other conditions that might make electrical equipment unsafe. Many electrical defects are detectable by visual inspection.

A worker (if competent to do so) is to undertake a check of the physical condition of the electrical equipment, including the lead and plug connections, prior to commencing use.

Elimination

Dispose of equipment no longer used, or change the teaching or research practices so that this equipment is no longer required;

Substitution

Replace corded electrical equipment with cordless equipment to mitigate the risk during operation;

Engineering control

Install Residual Current Devices (RCDs) to reduce the risk of electrical shock.

Inspect, test and tag

Inspection and testing of electrical equipment must be carried out by a competent person who has the relevant knowledge, skills and test instruments to carry out the relevant inspection and testing. The person carrying out any testing of Hut electrical equipment should also be competent to interpret the test results of any equipment

A person carrying out testing under AS/NZS 3760:2010 must be:

- a licensed or registered electrician (whichever applies), or
- in some jurisdictions, 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.

Repair faulty electrical equipment

Only a qualified person may repair faulty electrical equipment. A qualified person shall be either:

- a licensed electrician approved to work on the electrical installation and electrical appliances;
- an electronics technician approved to work on electrical appliances connected to or capable of being connected to the electrical installation;
- a trades-person holding a restricted electrical licence (air conditioning mechanic, plumber, mechanical fitter, electrical fitter) approved to work on restricted

electrical appliances and their connection to the electrical installation according to the specific conditions of their licence;

- such other person approved to work on electrical appliances by way of demonstration that their knowledge and experience is sufficient for them to do so safely;
- such other person approved to undertake service repair of electrical appliances.

Repaired Equipment

Any repaired, serviced or second hand equipment must be tested after repair or before reintroduction to service.

Any equipment/appliances in storage must either have an in date tag or be tagged with an 'out of service tag' and must be tested and tagged prior to use.

New Equipment

New electrical equipment that has never been put into use does not have to be tested before first use, as the supplier is deemed responsible for the initial electrical safety of the new item. However the Hut Executive Officer must ensure that new equipment is inspected for obvious damage before being used and that it is added to a Register upon entering service and is tested during the next scheduled test. In addition: Second hand equipment must be tested.

- When new equipment is installed, particularly computers, ensure that the electrical cords are exchanged and the new cords are visually inspected. The date the electrical equipment was placed into service should be recorded (e.g. on the record of installation or elsewhere).

Equipment not in use

Only equipment in use needs to be tested - consider disposing of equipment that is not in use.

Equipment not in use and/or out of testing date is to have an *Out of Service* tag attached indicating that the equipment must be tested prior to use.

Appliances and equipment brought in from home or by contractor

Electrical equipment and appliances brought for use on Hut sites by contractors, staff or other persons is subject to the same inspection and testing procedure as the equipment owned or leased by the Hut.

Electrical equipment and appliances must be inspected and tested prior to their use on Hut premises.

There is no requirement to test and tag personal laptops. However laptop cords should always be inspected prior to use. It is recommended that personal laptops older than three (3) years be tested and tagged. Testing is the responsibility and at the expense of the owner unless The Hut agrees to fund the cost.

Results of inspection and testing

The authorised person undertaking testing is to comply with the following:

Non - compliant equipment

- *Tag out* using special tag indicating the equipment is non-compliant or unsafe etc. and advise the Executive Officer and/or
- Remove the non-compliant item from service or otherwise ensure it is not used.

The Executive officer must organise to repair or dispose of or destroy the non-compliant equipment and adjust the inventory as applicable.

Inspecting and testing portable RCDs

- Requirements for residual current devices (RCDs) apply to workplaces where "plug in" electrical equipment (electrical equipment supplied with electricity through a socket outlet) is used in the following operating environment:
    - ~ electrical equipment is exposed to operating conditions that are likely to result in damage to the equipment (or a reduction in its expected life span) including conditions that involve exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust;
    - ~ electrical equipment is moved between different locations in circumstances where damage to the equipment or to a flexible electricity supply cord is reasonably likely;
    - ~ electrical equipment is frequently moved during its normal use
- If electricity is supplied through a socket outlet that does not exceed 20 amps, then the RCD must have a tripping current that does not exceed 30 milliamps.

RCD Protection

RCD protection is required for the following electrical equipment and depending on the type of appliance, installation and environment, the RCD protection may be provided by either portable or fixed RCDs.

- Hand held electrical equipment, including power tools, hair dryers and electrical knives;
- Electrical equipment which is moved during operation, including vacuum cleaners, floor polishers, extension cords, power boards, portable lighting.
- Electrical equipment which is moved between operation where damage to the equipment or supply cord could occur, including electrical welders, portable bench saws, audio visual equipment, extension cords and power boards.
- Where electrical safety could be affected by the operating environment:
- Appliances used in wet areas such as kettles and other kitchen appliances;

- Electrical equipment is used in an environment where it is exposed to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust.
- Extension cords used externally are to have portable RCDs attached or are to be integrated as part of the extension cord.

Refer the Code of Practice Managing Electrical Risks in the Workplace

Inspecting and testing RCDs

The Hut will take all reasonable steps to ensure that residual current devices used at the workplace are tested regularly by a competent person to ensure the devices are working effectively.

There are two types of test required for RCDs.

- The manual push button (Trip) test, which can be performed by the user to determine the RCDs tripping function and approximate tripping time.
- The leakage to Earth (10mA or 30mA leakage) operating time test-using an electrically isolated RCD test instrument.

A record of testing (other than daily testing) must be kept until the device is next tested or disposed of.

FREQUENCY OF INSPECTION AND TESTS

Electrical equipment shall be inspected and tested:

a) At intervals indicated in Table 4, or as varied by a **responsible person** based on a risk assessment;

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.

b) On return to service after a repair or servicing, that could have affected the electrical safety of the equipment. AS/NZS 5762 may apply.

c) Before placement in service, if sourced from a second-hand sale, to ensure the equipment is safe. AS/NZS 5761 shall apply.

To allow the flexibility to devise a customized solution for particular circumstances, organizations with sufficient expertise and resource may substitute other periods than those indicated in Table 4, after conducting a documented risk assessment, undertaken in accordance with the process specified in AS/NZS ISO 31000, and taking into consideration any relevant legislative requirements or guidelines.

This risk assessment option shall not apply to equipment offered for **hire**.

NOTE — this exclusion has been made as the hirer has no control over the end use of the equipment and therefore a valid risk assessment cannot be conducted by the hirer. Test and Inspection intervals for Electrical Equipment (as per AS/NZS 3760:2010)

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TABLE 4 - Testing and Inspection Intervals for Electrical Equipment

(CAUTION: This page must be read in conjunction with **AS/NZS 3760:2010** as a whole, and particularly clause 2.1)

Type of environment and/or equipment (a)	Interval between inspection and tests				
	Equipment including Class I equipment, Class II equipment, cord sets, cord extension sets and EPODs (b)	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 work or repair, manufacturing, 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 **hostile environment**	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 **hostile environment**	5 years	3 months	6 months	2 years	5 years
4 **Residential type areas** of: hotels, residential institutions, motels, boarding houses, halls, hostels accommodation houses, and the like	2 years	6 months	6 months	2 years	2 years
5 Equipment used for **commercial cleaning**	6 months	Daily, or before every use, whichever is the longer	N/A	6 months	N/A
6 **Hire** equipment: Inspection	Prior to **hire**	Including push-button test by **hirer** prior to **hire**		N/A	N/A
Test and tag	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				

Appliance Tagging Services Pty Ltd