Australian Men's Shed Association
SHOULDER TO SHOULDER

TEST AND TAG

AUSTRALIAN STANDARDS

1. What is AS/NZS 3760?

The *Australian and New Zealand Standard AS/NZS3760, In-service Safety Inspection and Testing of Electrical Equipment* is the standard which specifies procedures for the safety inspection and testing of low voltage single phase and poly-phase (e.g. nominal 240V and 415V) electrical equipment, connected to the power supply by a flexible lead and/or connecting device.

The purpose of the inspection and testing of electrical is to identify:

- equipment that may cause an electrical hazard to the user or other persons
- any adverse conditions or environment that could potentially make the electrical equipment unsafe.

The Standard refers to electrical equipment that is connected to a power supply by a flexible cord and/or connecting device.

* The Standard states that the inspection & testing procedures shall be carried out by a 'Competent Person'.

2. What are the guidelines?

The standard created by Standards Australia is *AS/NZS 3760* that outlines a testing method and frequency for electrical appliances. It was created to minimize electrical hazards in the workplace with appliances inspected for damage.

Various measurements are made to the appliances:

- Earth continuity
- Insulation
- Polarity
- Physical condition.

After testing has determined a pass, a tag is attached to the appliance lead indicating:

- When it was tested
- When the next test is due
- The tracking code.

Retesting intervals of equipment can vary from 3 months to 5 years depending of the environment where the equipment is located.

Please refer to: 1. 'An AMSA Resources: Test Intervals Class of Work'
2. 'An AMSA Resources: Test Intervals extract AS3760

This standard is used in both Australia and New Zealand. Colloquially, the standard is often referred to as *Test and Tag*.

Testing is allowed to be done by anyone deemed competent by training or experience and does not require to be undertaken by a Registered Electrician.

3. What testing equipment can be used according to the guidelines?

The Standard AS/NZS 3760 requires that a range of tests be carried out on electrical equipment including:

- earthing continuity
- insulation resistance
- leakage current and
- operation of Residual Current Devices (RCDs).

Testing instruments that can be used to perform these tests include:

- an insulation resistance tester (commonly known as a megger)
- continuity tester
- multimeter
- Portable Appliance Tester (PAT) and
- RCD Tester (for testing the operation of a Residual Current Device).

Note: Tests performed on *415 volt electrical equipment* will require the use of test equipment appropriate to the task.

Most PAT Testers are specifically designed to perform tests on 240 volt electrical equipment therefore they cannot be used to perform tests on 415 volt equipment.

4. What needs testing?

The Standard specifies procedures for the safety inspection and testing of low voltage single phase and poly-phase (e.g. nominal 240V and 415V) electrical equipment, connected to the electrical supply by a flexible cord, which is:

- new equipment placed into service for the first time,
- is already in-service,
- has been serviced or repaired,
- is returning to service from a second-hand sale or is
- available for hire

The Standard also specifies procedures for Residual Current Devices / Safety Switches.

5. Exemptions

The Standard notes a number of exemptions including:

1.1.1 does not apply to electrical equipment (e.g. suspended light fittings), *at a height of 2.5m or greater above the ground*, *floor or platform*, where there is not a reasonable chance of a person touching the equipment and, at the same time, coming into contact with earth or any conducting medium which may be in electrical contact with earth or through which a circuit may be completed to earth.

1.1.2 does not apply to equipment which would *need to be dismantled to perform the inspection and tests* specified in this Standard. ***NOTE:*** if for some reason outside the scope of this Standard, equipment must be dismantled to verify safety, this action *must be performed by a technically qualified person.*

1.1.3 *functional checks* are not considered part of a safety evaluation and therefore not included in this Standard.

1.1.4 only applies to equipment in-service at a place of work or public place, or offered for hire.
NOTE: For example, this Standard does not apply to demonstration stock in retail or wholesale outlets.

1.1.5 does not apply to fixed or stationary equipment connected to wiring that *forms part of the electrical installation* and falls within the scope of AS/NZS 3000.

1.1.6 does not apply to equipment whose nature is that of a *medical device* as defined in AS/NZS 3551.
Examples of common electrical appliances that would require testing:

- Computers, printers and monitors
- Modems
- Photocopiers
- Fax machines
- Power tools (drills, saws, grinders, compressors etc)
- Battery chargers
- Desk-top lamps
- Vacuum cleaners
- Floor polishers
- Extension leads
- Power boards
- TV's and radios
- Some air conditioners
- Refrigerators
- Portable flood lights
- Heaters
- Jugs
- Toasters
- Hand dryers
- Washing machines
- Radio transmitters
- CD players etc.

Examples of equipment to be tested

Category of equipment	Examples of electrical equipment to be tested
Hand held electrical equipment	➢ Hand held power tools ➢ Hairdryers ➢ Kitchen appliances ➢ Laboratory equipment
Portable electrical equipment moved while in operation	➢ Floor polishers ➢ Vacuum cleaners ➢ Portable lighting equipment
Electrical equipment that is moved between operations in such a manner that could damage the flexible supply lead	➢ Portable electronic whiteboards ➢ Overhead projectors ➢ Laptop computers ➢ Electrical plant used in factory type environments ➢ Welding machines ➢ Extension cords ➢ Power boards
Electrical equipment that is used in a hostile operating environment where damage to the equipment or the electricity supply to that equipment could occur such as in wet or dusty conditions.	➢ Electrical equipment used in wet or dusty areas ➢ Electrical equipment used outdoors ➢ In kitchens ➢ Laboratories (chemical damage) ➢ Certain factory-type environments

6. Who can Test & Tag?

You must be deemed competent to do this work. The Australian Standards and the WHS Regulations Code of Practice 'Managing Electrical Risks in the Workplace' states:
"Inspection and testing of electrical equipment ***should only 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 electrical equipment should also be competent to interpret the test results of any equipment they use.*
For example, a person carrying out testing should be:

- *a licensed electrician, 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 applicant tester and the visual inspection of electrical equipment."***

According to the Australian Standard certain competencies are required to inspect, test and tag electrical equipment. The Regulation defines a competent person as someone who has the knowledge and skill to inspect and test electrical equipment. This knowledge and skills can be gained through:

- Training
- Qualifications
- Experience
- A combination of these