

## CHAPTER 5 – INSPECTION AND TESTING

**The OHS Regulation (clause 64) requires the employer to ensure the electrical installation and electrical articles are regularly inspected, tested and maintained by a competent person to ensure it is safe.**

### 5.1 Who can perform inspection and testing?

For the purposes of this Chapter this means the following class of person,

- a licensed electrician, this class of person can carry out all of the inspection and testing activities described in this Chapter, or
- a trained competent person not qualified in electrical work, but who has obtained competency to carry out inspection and testing of portable plug-in electrical equipment using a portable appliance tester (PAT). This class of person is restricted to only carry out 'testing and tagging' activities as described in specific clauses of this Chapter.

#### 5.1.1 Training and competence - Competent person

(a) A trained competent person who carries out the inspection and testing of portable plug-in electrical equipment should have successfully completed a VETAB approved training course or equivalent State regulator's approved training course that has been conducted by a registered training organisation (RTO). For example the NSW Department of Technical and Further Education's Course - *Safety Testing Electrical Appliances – 6033*.

**Note:** 'Successful completion' means the trainee has been confirmed by the RTO as competent following completion of a competency assessment.

(b) The RTO who provides the training and competency assessment required by this code must ensure that the person is competent and provide the person concerned with a statement of attainment or written certification of his/her successful completion of assessment, that has an identifying number particular to that person.

(c) A competent person trained in the use of a PAT must produce their statement of attainment or certificate on request to an employer, principal contractor, inspector, contractor, elected OHS representative or authorised representative.

Note: For further guidance on the competencies of this class of person refer to the *WorkCover Guide – Competent Person for Testing and Tagging Electrical Equipment*.

### 5.2 Safety and compliance testing of construction wiring by a licensed electrician

(a) All construction wiring, including switchboards and wiring to relocatable structures, must be inspected and tested by a licensed electrician after completion of the electrical wiring work and before connection for normal use. In addition to visual inspections, testing must be for earth continuity, insulation resistance, polarity, residual current devices and correct circuit connections, and must be performed in accordance with AS/NZS 3000 – Wiring Rules. Guidance relating to testing methods may be found in AS/NZS 3017: Electrical installations – Testing and inspection guidelines.

(b) Notify the results of the safety and compliance tests and issue a *Certificate of Compliance – Electrical Work* to the owner or principal contractor in charge of the electrical installation and, if required by the *Electricity (Consumer Safety) Regulation, 2006* the local electricity network operator. Copies of *Certificates of Compliance - Electrical Work* should be kept on site by the

principal contractor and made available for review by inspectors, electricity network operators, OHS representatives or authorised officers.

For example, notification is required where the physical location of a switchboard or associated electrical equipment is altered at a construction site.

**Note:** Notification is not required for disconnection, reconnection, replacement or repair activities provided the electrical wiring work does not alter the electrical loading, method of electrical protection, system of earthing or physical location of fixed switchboard/s or associated electrical equipment being repaired or replaced.

(c) Following initial testing, re-inspection of the construction wiring, including switchboards and wiring to relocatable structures must be carried out by a licensed electrician at 6 monthly intervals. If the re-inspection process discloses an apparent fault or non-conformance the relevant section of the construction wiring must be re-tested following repair or replacement.

(d) The electrical installation, (including the construction wiring, switchboards and wiring to relocatable structures) must be maintained by a licensed electrician to ensure it remains safe for use.

(e) Records of inspections, tests and maintenance must be made and kept in accordance with the requirements of clause 5.6 (a) & (b)

### **5.3 Testing of plant, portable plug-in electrical equipment**

(a) All electrical plant including portable plug-in electrical equipment and flexible extension cords must be visually inspected regularly for wear and mechanical damage, and tested in accordance with AS/NZS 3760 for earth continuity and insulation resistance or leakage current.

(b) Inspection and testing of electrical plant, portable plug-in electrical equipment and flexible extension cords must be undertaken by a licensed electrician or a trained competent person, (refer to Clause 5.1) in accordance with the following testing intervals,

(i) prior to its introduction to service on a construction site;

(ii) at regular three monthly intervals for single unit dwelling house sites;

(iii) at regular monthly intervals for all other construction work, except if an electrical equipment risk assessment report determines that inspection and testing shall be carried out by a licensed electrician at regular three monthly intervals. Refer to Clause 5.3.1 below.

Tested plant, portable plug-in electrical equipment and flexible extension cords must be tagged and all test results recorded in accordance with the requirements of clause 5.6 (a) & (b)

#### **5.3.1 Electrical risk assessment report**

(a) An electrical risk assessment report means a risk assessment that is undertaken at a construction site relating to the use of electrical plant, portable plug-in electrical equipment and flexible extension cords at that site that determines the inspection and testing frequency of that electrical equipment.

(b) Electrical plant including portable plug-in electrical equipment and flexible extension cords that is subject to an electrical risk assessment report that alters the testing frequency to a 3 month testing interval shall be inspected and tested by a licensed electrician.

(c) Any such risk assessment must be prepared in accordance with the consultation requirements outlined in Chapter 2 of the Code and include the following persons,

- (i) A representative of the employer or principal contractor;
- (ii) Licensed electrician nominated by the employer or principal contractor in charge of the construction work;
- (iii) OHS committee representative or OHS representative or other agreed employee representative (refer to clause 2.1.1);
- (iv) Site safety employee representative/s.

### **5.3.2 Assessment results and outcome**

- (a) The following information must be recorded on the electrical risk assessment report:
  - (i) the name of the person who carried out the risk assessment,
  - (ii) the name or names of the person or persons consulted prior to the risk assessment being carried out;
  - (iii) the location and address of the construction site;
  - (iv) the date on which, or dates over which the risk assessment was carried out,
  - (v) the result or outcome of the risk assessment,
  - (vi) a determination as to the requirement to regularly inspect and test portable electrical equipment and flexible electrical cords every three months.
  - (vii) approval by the employer or principal contractor.

An example of an electrical risk assessment report is provided at Appendix 1 to assist in undertaking and recording the results and outcome of the risk assessment.

### **5.4 Testing of electrical equipment in amenities sheds and site offices**

All electrical equipment in amenities sheds and site offices should be inspected, tested and tagged upon arrival or relocation on site and then at least three monthly intervals thereafter by a licensed electrician or a trained competent person (refer to Clause 5.1).

At the date of the inspection use a tag as specified in clause 5.7. The tag will be valid for at least three months. Details of inspections and tests are to be recorded in accordance with Clause 5.6 and kept on site or at the owner's premises.

### **5.5 Testing of hired electrical plant and electrical appliances**

All electrical plant and electrical appliances hired for construction work, must be inspected, tested and re-tagged (when due) and recorded at the hirer's premises prior to hire in accordance with the requirements of AS/NZS 3760. It is then the responsibility of the hiree to meet the conditions of Clauses 5.3, 5.6 and 5.7.

**The OHS Regulation (clause 65) requires the employer to keep records of all inspections, tests and maintenance carried out on the electrical installation and electrical equipment.**

### 5.6 Record keeping and production of records

(a) Records of inspections, tests and maintenance carried out on the electrical installation and electrical plant/equipment must be kept by the employer. A copy of records should also be kept on site by the principal contractor.

(b) Records of inspections, tests (including *Certificates of Compliance – Electrical Work*) and maintenance and if applicable electrical risk assessment reports must be produced to an Inspector, principal contractor, electricity network operator, elected OHS representative or authorised representative within 24 hours of a request being made.

(c) Ensure that details in the inspection and testing record specified in Clause 5.3 and 5.4 are legible and must show:

(i) the date of the inspection;

(ii) the plant number or inspection number of the item inspected;

(iii) the results of the tests and inspections;

(iv) details of any repair / maintenance work required as a result of the inspection;

(v) the license/certificate number, printed name and signature of the licensed electrician or trained competent person who carried out the inspections and tests.

### 5.7 Tags

Ensure that the tags specified in clause 5.3 and 5.4 are legible and must show:

(a) the date of the inspection;

(b) the plant number or inspection number of the item inspected;

(c) the license/certificate number, printed name of the licensed electrician or trained competent person who carried out the test and filled in the tag.

Ensure that all tags:

(i) are durable and water resistant;

(ii) are non metallic;

(iii) are self-adhesive or positively secured;

(iv) are incapable of re-use;

(v) have a bright, distinctive surface.

The tag, may be colour coded to identify the month in which the inspection and testing was performed.

If colour coded tags are used a recommended colour coding schedule is as follows:

January - Red	May – White	September - Red
February - Blue	June - Yellow	October - Yellow
March - Orange	July - Blue	November - Orange
April - Green	August - Green	December - White

### 5.8 RCD testing

- (a) Ensure that every portable RCD is tested by the user before each use on a daily basis by operation of the pushbutton.
- (b) Ensure that every portable RCD is subject to an operating time at tripping current test using an RCD tester that is carried out by a licensed electrician every 3 months.
- (c) Ensure that every fixed RCD is tested by a licensed electrician or nominated person - every month by operation of the pushbutton.
- (d) Ensure that every fixed RCD is subject to an operating time at tripping current test using an RCD tester that is carried out by a licensed electrician every three months from the time of installation.
- (e) Record the results of the operating time tests in accordance with clause 5.6, listing.
- (i) the plant number or identifying number of the RCD;
- (ii) the result of the test;
- (iii) the date of the test;
- (iv) the license number, printed name and signature of the licensed electrician who performed the inspections and tests.

<b>Table 2 - Inspection and testing intervals</b>	
<b>Equipment class</b>	<b>Testing intervals</b>
Construction wiring including, switchboards	Inspected and tested at time of installation, then re- inspected every 6 months.
Relocatable structures, fixed and transportable equipment	6 months
Portable plug-in equipment and flexible electrical cords	1 month: construction sites <u>or</u> (# 3 months) 3 months: single unit dwelling house sites
Equipment in amenities and site offices	3 months
Portable RCD's - pushbutton test	Before each use of equipment
Portable RCD's - operating time	3 months
Fixed RCD's - pushbutton test	1 month
Fixed RCD's - operating time	3 months
Hire equipment	Upon introduction to service then in accordance with the testing intervals appropriate to the equipment class.

# Following completion of an electrical risk assessment report in accordance with the requirements of clauses 5.3.1 and 5.3.2.