Electrical Procedure (9) V3

**Version Control & Change History**

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# PURPOSE

To provide guidance in the management of electrical hazards and to define the system requirements that shall be implemented.

# SCOPE

This procedure applies to all workers under the Catholic Church Endowment Society Inc. (CCES).

# DEFINITIONS

Definitions can be found on the [Catholic Safety Website](http://www.cshwsa.org.au/definitions/).

## Information

The most common electrical risks are:

* electric shock;
* arcing;
* explosion; or
* fire.

# RESPONSIBILITIES

Specific responsibilities for carrying out certain actions required by the CCES, have been allocated to particular position holders within the organisation. Such responsibilities are consistent with the obligations that the legislation places on officers, managers, supervisors, workers and others in the workplace.

Responsibility, authority and accountability processes have been defined in Responsibility, Authority & Accountability Procedure (12), and summarised in Responsibility, Authority & Accountability Matrix.

You are required to familiarise yourself with this procedure in order to understand the obligations that you may have in relation to its implementation and to carry out your assigned actions and responsibilities.

# **PROCEDURE**

## Prevention of Electrical Faults

Damage, due to misuse, to electrical leads or the outer casings of electrical appliances contribute to the incidences of electric shock. Damage to leads and insulating casings may expose electrical wiring. The following requirements should be undertaken:

* always remove leads from the power outlet by the plug;
* do not pull on the lead as this will result in separation of the insulating sheath of the lead from the plug, exposing the electrical wiring and increasing the likelihood of a worker coming into contact with electricity;
* do not drag electrical leads across the ground or other abrasive surfaces. Abrasive surfaces, such as concrete pathways, steps and stairs, may damage the insulating sheath of the lead, exposing the electrical wiring inside;
* do not place extension cords across pedestrian walkways as extension cords pose significant trip hazards.

## Identification of Hazards

Workers required to use electrical appliances / equipment, are required to conduct preoperational visual inspections of these appliances and any equipment associated with the use of these appliances / equipment, including cords, extension cord sets, and power boards.

## Purchasing Electrical Appliances & Equipment

A pre-purchase checklist must be completed for all electrical appliances / equipment prior to purchase. Depending on the risk associated with the electrical appliance / equipment a documented risk assessment may be required when equipment is placed into service refer to **Purchasing Procedure (20)**.

## Faulty Electrical Appliances & Equipment

### Identification of Faulty or Damaged Electrical Appliances & Equipment

Electrical appliances and equipment determined to be either faulty or damaged must be identified to prevent use, intentional or inadvertent.

Damaged or faulty electrical appliances or equipment must be disconnected from the electricity supply, and identified with a Danger Tag or Out of Service Tag, and removed from service immediately.

All information fields in Danger or Out of Service Tags shall be documented. Examples of required information may include the appliance or equipment, a description of the fault or damage, the name of the person identifying the fault or damage, and the date / time the tag was placed.

Danger or Out of Service Tags, can only be removed by the person who affixed the label or an authorised person, at the completion of the necessary works.



Electrical Appliances & Equipment, tagged with a Danger Tag or Out of Service, MUST NOT BE USED.

### Isolation of Faulty Electrical Appliances & Equipment

The disconnection of damaged or faulty appliances or equipment from the electricity supply, while effective isolation, does not ensure that the appliance or equipment will not be used until it is repaired or replaced. Faulty or damaged appliances or equipment shall be removed from the workplace, if possible, and returned only after repairs have been completed and the correct operation of the equipment verified.

If necessary, other alternatives for isolation of Electrical Appliances & Equipment may be considered where removal of the equipment is not possible. An option may include to lock out the power cord using a “Plug Lock Out”.



### Replacement or Repair of Electrical Appliances & Equipment

The workplace shall arrange to have the damaged or faulty electrical appliance or equipment assessed and, if viable, repaired by a competent person, for example, a licensed electrician or appliance repairer.

Only after the electrical appliances and equipment is repaired and its safe operation verified, is any isolation or lock out device to be removed (isolation or lock out devices may be removed by the competent person to effect the repairs and / or testing) and any warning tags removed.

The workplace is responsible for reinstating the equipment back into the workplace and the retention of any records provided by the repairer.

If the equipment cannot be repaired, it shall be made inoperable prior to being disposed of. A record of disposal must be recorded.

## Inspection and Testing of Electrical Appliances & Equipment

### Routine Inspection of Electrical Appliances & Equipment

Workers shall visually inspect electrical appliances & equipment on a regular basis. Visual inspection will allow identification of obvious damage, wear or other conditions that may make the equipment unsafe. The inspection of electrical appliances & equipment involves, but is not limited to, the following:

* the detection of obvious damage, defects or modifications to the electrical appliances & equipment, including accessories, connectors, plugs or extension cord sockets;
* the detection of discolouration that may indicate exposure to excessive heat, chemicals or moisture;
* the checking that flexible cords are effectively anchored to equipment, plugs, connectors and extension cord sockets;
* looking for damage to flexible cords (cuts or splits to the insulation, worn areas in the insulation exposing electrical wiring, exposed wiring at the cord and plug connection – refer to 5.2 Identification of Hazards);
* checking that the equipment operating controls are in good working order, that is, secure, aligned and appropriately identified;
* checking the covers and guards are secured and working in the manner intended by the manufacturer or supplier;
* checking that ventilation inlets and exhausts are unobstructed.

### Requirements for Inspection & Testing

#### Determining Inspection & Testing needs

The workplace must ensure that the electrical appliances & equipment are regularly inspected and tested by a competent person if the electrical appliances & equipment is:

* supplied with electricity through an electrical socket outlet (“plug in” equipment); and
* used in an environment in which its normal use exposes it to operating conditions that are likely to result in damage to the equipment or a reduction in its expected lifespan. This includes conditions that involve exposing the electrical appliances & equipment to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust.

It is the responsibility of the workplace to ensure that electrical appliances & equipment that requires inspection and testing is identified and inspected / tested in accordance with AS/NZS 3760:2010 In-service safety inspection and testing of electrical equipment. Table 1 below provides a summary of the type of environment / equipment to be tested and the frequency.

The workplace shall determine inspection and testing requirements for electrical appliances & equipment. This may be achieved using internal or external competent person(s). The engagement of contractors to provide testing and tagging services shall be done in accordance with Contractor Management Procedure (6).

#### Records of Inspection & Testing

The tag attached to the electrical cord of electrical appliances & equipment shall serve as a record of the equipment being tested and tagged. The tag must document the equipment, the name of the person completing the inspection and testing, the date of the inspection and testing, and the next due date.

**Table 1: Summary of Type of Environment / Equipment to be Tested & Frequency**

|  |  |  |
| --- | --- | --- |
| **Category / Environment** | **Machinery & Equipment (examples)** | **Test & Tag Frequency** |
| Workshops, Agricultural Studies; Science Laboratories; Commercial Kitchens / Canteens | Electrical machinery or equipment connected by a flexible cord and plug used in environments where items are **potentially exposed** to: moisture, heat, vibration, dust, mechanical or chemical damage that could result in a reduction in expected lifespan. | * Yearly * Test & tag is not required for hard wired fixed machinery & equipment |
| Offices & Meeting Rooms; Common Areas; Music Rooms; Kitchens; Computer Laboratories; Libraries; Classrooms | Electrical machinery and equipment with a flexible cord and plug that is moved during its normal use for the purpose of its operation. (Laptop & phone chargers, portable protectors, radio / speakers and domestic vacuum cleaners).  Extension leads / cords and power boards.  Domestic kitchen appliances including kettles, toaster and sandwich presses. | * Yearly |
| Machinery and equipment fitted with a flexible cord and plug that is not moved during use; or is installed above a height of 2.5 metres. (Desktop computers, monitors / screens, photocopiers, printers, power white-boards, fixed projectors, fridges, microwaves, powered roller doors and wall clocks). | * 5 yearly |
| Commercial cleaning machinery and equipment (pressure cleaners, vacuum cleaners and floor polishers). | * 6 monthly |
| Hire Machinery & Equipment | | * 3 monthly |
| Non portable Residual Current Devices & e-stops | | * Push button test 6 monthly (site test). * Operating – Time Test every two years |
| Portable Residual Current Devices | | * Push button tested prior to each use. * Operating – Time Teste annually (every year). * Document results and retain until device is next tested |

#### New Electrical Equipment

New electrical appliances / equipment should be visually inspected to ensure that no damage has occurred during transport, delivery, installation or commissioning. New appliances / equipment are to have a label “New to Service” attached and must be documented on the Electrical Appliance / Equipment Register or similar.



## Electrical Work

### What is Electrical Work?

The term “electrical work” applies to the following tasks:

* the connection / disconnection of electrical supply wiring to / from electrical equipment;
* installing, removing, adding, testing, replacing, repairing, altering or maintaining electrical equipment or an electrical installation.

All electrical work required to be undertaken must be by an appropriately licensed electrician engaged in accordance **Contractor Management Procedure (6)**.

### What is not Electrical Work?

The following activities are not considered to be “electrical work”:

* work that involves the connection of electrical equipment to the electricity supply by means of a flexible cord plug and socket outlet;
* work on a non-electrical component of the equipment if the person undertaking the work is not exposed to an electrical risk;
* the replacement of electrical equipment or electrical component of the equipment if the task can be safely performed by a person who does not have expertise in carrying out electrical work, for example, the replacement of domestic fuses and light bulbs;
* assembling, making, modifying or repairing electrical equipment as part of a manufacturing process;
* building or repairing ducts, conduits or troughs where electrical wiring is or will be installed if:
* the ducts, conduits or troughs are not intended to be earthed;
* the wiring is not energised; and
* the work is supervised by a licensed or registered electrical worker.
* locating or mounting electrical equipment, or fixing electrical equipment in place, if this task is not performed in relation to the connection of electrical equipment to an electrical supply;
* assisting a licensed electrician to carry out electrical work if:
* the assistant is directly supervised by the licensed electrician; and
* the assistance does not involve physical contact with any energised electrical equipment;
* carrying out electrical work, other than work on energised electrical equipment, in order to meet the eligibility requirements in relation to becoming a licensed electrician.

### Completion of Electrical Work

All electrical work undertaken must be issued with an Electrical Certificate of Compliance. The sites must retain the Electrical Certificate of Compliance for the life of the building / equipment.

## Records

Documents used to manage electrical and as prescribed by this procedure will be produced in a format that allows tracking for verification and review and be in accordance with requirements detailed in Document Control Procedure (24).

## Review

This procedure will be subject to a planned review by the document owner in accordance with the requirements outlined in Document Control Procedure (24).

Other methods for reviewing and evaluating the performance of this procedure will include:

* audit activity;
* investigations;
* performance reports.

# RELATED SYSTEM DOCUMENTS

## Policies & Procedures

Consultation & Communication (5)

Contractor Management (6)

Responsibility, Authority & Accountability Procedure (12)

Hazard Management Procedure (14)

Purchasing Procedure (20)

Document Control Procedure (24)

## Forms & Tools

Electrical Appliance / Equipment Register

RCD Testing Form

Responsibility, Authority & Accountability Matrix

# REFERENCES

Legislation and other requirements related to this procedure are defined in Group Legal Register which can be accessed via the Catholic Safety Health SA website

## External Resources

Nil

# AUDITABLE OUTPUTS

The following examples of records will be used to verify implementation of this procedure:

* Electrician Licenses
* Approved Electrical Appliances & Equipment Repairer / Testing and Tagging Contractor documentation e.g. licenses, approved contractor list
* Inspection and Testing Tags
* Danger / Out of Service Tags
* Work instructions
* Pre-start Electrical Appliances & Equipment checks
* Inspection and Testing register (or equivalent).