Electrical Safety Procedure (Test and Tag)

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Description	This Procedure provides a practical summary of the test and tag requirements outlined in the Griffith University Electrical Safety Policy and Electrical Safety Procedure.

Related documents

Construction Work Policy
Electrical Safety Policy
Health and Safety Policy
Risk Management Policy
Reporting and Recording Procedures for incidents, injuries, dangerous incidents, hazards and near misses
Incident Reporting on GSafe

Campus Life Intranet

CLF-SAF-BPM-002	Electrical Safety Work Flowchart
CLF-SAF-FRM-010	Certificate of Electrical Testing and Compliance Form
CLF-SAF-GDE-003	Portable Ladders Guideline
CLF-SAF-GDE-004	Personnel Protective Equipment Guideline
CLF-SAF-GDE-011	Electric Arc Flash Protection Guideline
CLF-SAF-PER-004	Excavation and Trenching Permit
CLF-SAF-PER-005	Working near OH Lines and LV Installations Permit
CLF-SAF-PER-006	Services Isolation Permit
CLF-SAF-PER-007	Authorised Removal of Personal Danger Tag and Lock Permit
CLF-SAF-PER-008	Live Work, Fault Finding and Testing Permit
CLF-SAF-PER-009	HV Installation Access Permit to Perform HV Work (contractor only)
CLF-SAF-SOP-008	Isolation, Lock-Out, Tag-Out Procedure
CLF-SAF-SOP-009	Live Work, Fault Finding and Testing Procedure
CLF-SAF-SOP-010	Working in Vicinity of Overhead Lines or Underground Cables Procedure
CLF-SAF-SOP-011	Certificate of Electrical Safety Compliance Procedure
CLF-SAF-SOP-012	Electrical Test Instrument and Safety Equipment Maintenance Procedure
CLF-SAF-SOP-013	Personnel Protective Equipment Procedure
CLF-SAF-SWMS-006	Services Isolation, Lock-Out Tag-Out SWMS
CLF-SAF-SWMS-007	Live Work, Fault Finding and Testing SWMS
CLF-SAF-SWMS-008	Excavation, Trenching and Working near Underground Services SWMS
CLF-SAF-SWMS-009	Operating Plant near Overhead Lines SWMS
CLF-SAF-SWMS-011	Clearing Vegetation near Overhead Lines and Structures SWMS
CLF-SAF-SWMS-012	Testing to Connect to Electricity Supply SWMS

Queensland Legislation

Work Health & Safety Act 2011
Work Health & Safety Regulation 2011
Electrical Safety Act 2002
Electrical Safety Regulation 2013

Queensland Codes of Practice

Electrical safety code of practice 2013 - Managing electrical risks in the workplace
Electrical safety code of practice 2010 - Working near overhead and underground electric lines
Electrical safety code of practice 2010 – Works

SAIGLOBAL - Australian Standards

AS/NZS 3000:2018	Electrical installations (the Wiring Rules)
AS/NZS 3012:2010	Electrical installations - Construction and demolition sites
AS/NZS 3017:2007	Electrical installations - Verification guidelines
AS/NZS 3105:2014	Approval and test specification - Electrical portable outlet devices
AS/NZS 3551:2012	Management programs for medical equipment
AS/NZS 3760:2010	In-service safety inspection and testing of electrical equipment
AS/NZS 4513:1995	Medical Electrical Equipment - Fundamental aspects of safety standards
AS/NZS 4836:2011	Safe Work: Safe working on or near low-voltage electrical installations and equipment
AS/NZS IEC 60601.1:2015	Medical Electrical Equipment - General Requirements for Basic Safety and Essential Performance

Industry Guidelines

Electricity Hazard Guide (Live Performance Australia)
Safety Guidelines for the Entertainment Industry - 24 August 2001 (Australian Entertainment Industry Association and the Media Entertainment and Arts Alliance)
Manufacturer's instructions for different types of calibrated equipment

1. DEFINITIONS

1.1 Amusement work

Means work, other than work performed by a non-profit organisation, to assemble, operate or disassemble any of the following on the site on which it is used, intended to be used or has been used—

(a) an amusement device or amusement ride;

(b) a thing used to provide amusement activities, including side show activities, associated with—

(i) carnivals, fairs or shows; or

(ii) amusement arcades or similar places;

Example of side show activities—providing hamburgers, fairy floss or massages in a side show

(c) a thing used to provide entertainment or advertising activities, in temporary sites, associated with shows, fairs or carnivals.

1.2 Competent person

(a) ***Competent person***, in relation to a task, means a person who has acquired, through training, qualifications, experience or a combination of these, the knowledge and skill to carry out the task.

Note: electrical work may only be performed by a person if the person -

(i) is the holder of an appropriate electrical licence authorising the work; or

(ii) is otherwise authorised to perform the work under the Electrical Safety Act s55(3)(d).

e.g. the authorised testing of electrical equipment (test and Tag) of specified electrical equipment or Hire equipment

(b) ***Competent person (Test and Tag)*** means:

- a person who has the necessary practical and theoretical skills, acquired through training, qualification, experience or combination of these, to undertake correctly the required tasks, and for testing and tagging, and
- has completed the required national competencies to be deemed competent in accordance with AS/NZS 3760 and AS/NZS 3012, and/or
- if the test and tag is for medical equipment, completed a course of instruction to AS/NZS 3551.

Note: Additional or different competencies may be required for more complex kinds of testing outside the scope of AS/NZS 3760.

1.3 Construction work

(a) Construction work within the meaning of the Work Health and Safety Regulation, s289, other than amusement work or rural industry work; or

(b) Work done in conjunction with construction work mentioned in paragraph (a).

Example of paragraph (b)—installation of plumbing in a house under construction

1.4 Cord extension set

Means an assembly of a plug intended for connection to a mains socket-outlet, a sheathed flexible cord and a cord extension socket (e.g. extension cord).

1.5 Cord set

Means an assembly of a plug intended for connection to a mains socket-outlet, a sheathed flexible cord and an appliance connector.

	
Example of a cord extension set	**Example of a cord set**

1.6 Electrical equipment

As per the *Electrical Safety Act 2002 (s14)*

Means any apparatus, appliance, cable, conductor, fitting, insulator, material, meter or wire that—

(a) is used for controlling, generating, supplying, transforming or transmitting electricity at a voltage greater than extra low voltage; or

(b) is operated by electricity at a voltage greater than extra-low voltage; or

(c) is part of an electrical installation located in an area in which the atmosphere presents a risk to health and safety from fire or explosion; or

(d) is, or is part of, a cathodic protection system.

i.e. wiring systems, switchgear, control gear, accessories, appliances, luminaires and fittings used for such purposes as generation, conversion, storage, transmission, distribution or utilization of electrical energy

1.7 Electrical equipment (transportability)

Electrical equipment can be generally categorised in terms of transportability, such as:

(a) ***Portable*** - an appliance which is hand-held and/or moved while in operation or can be moved easily from one place to another while connected by plug to a general-purpose outlet (connected to the supply).

e.g. vacuum cleaner, power drill, high pressure washers and concrete grinders

(b) ***Movable -*** an appliance or equipment that can be moved from one place to another by unplugging from a general-purpose outlet, but that is not moved during operation.

e.g. AV projector, electronic balance scale, small water bath, hot plate and stirrers

(c) ***Fixed/stationary/standing*** - an appliance or equipment:

(i) ***stationary*** - in normal use is stationary in operation

e.g. desk top computer, bench top autoclave

(ii) ***standing*** - a size or function as to be difficult or unlikely to be moved from one place to another (generally equipment with a mass exceeding 18kg)

e.g. fridge, freezer, furnace, stove, oven, office printer

(iii) ***fixed*** - fastened to a support, secured in position or otherwise due to its size and mass, located in a specific location

e.g. furnace, laser, spectrometer, AC unit

1.8 Electrical infrastructure

Electrical Infrastructure includes an electrical installation, electrical equipment, electrical line or associated equipment for an electrical line.

1.9 Electrical installation

As per the Electrical Safety Act 2002 (s15)

(a) An electrical installation is a group of items of electrical equipment that—

(i) are permanently electrically connected together; and

(ii) can be supplied with electricity from the works of an electricity entity or from a generating source; and

(iii) do not include items that are works of an electricity entity.

(b) An item of electrical equipment may be part of more than 1 electrical installation

(c) In subsection (1)(a)—

(i) an item of electrical equipment connected to electricity by a plug and socket outlet is not permanently electrically connected; and

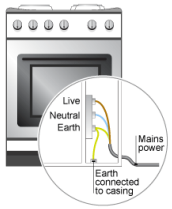
(ii) connection achieved through using works of an electricity entity is not a consideration in determining whether or not electrical equipment is electrically connected.

i.e. electrical equipment installed for the purposes of conveyance, control, measurement or use of electricity, where electricity is or is to be supplied for consumption. It includes electrical equipment supplied from a distributor's system or a private generating system.

1.10 Fixed wiring (permanent, fixed or hard wired)

Means wiring in the form of a flexible cable or flexible cord connecting a fixed or stationary electrical equipment directly from the item of electrical equipment to wiring that forms part of the permanent electrical installation of a building or site.

e.g. wiring connected to the terminals within the equipment and connected to a junction box or other permanent connection unit to wiring of the electrical installation.



Connection to Electrical Equipment wiring

Connection to the Electrical Installation wiring

1.11 Management control (of plant and equipment)

In relation to plant and electrical equipment, management control includes having responsibility for the operation and use, testing and inspection, maintenance and repair of the electrical equipment. Control may also include responsibility for the safe installation and commissioning of the electrical equipment.

1.12 Manufacturing Work

Means the work of assembly, disassembly, fabrication, installation, maintenance, manufacturing, refurbishment or repair, but does not include amusement work, construction work or rural industry work.

Examples—

- installing the interior fittings of a shop
- manufacturing clothes
- Repairing leaking pipes

1.13 Portable outlet device (power boards)

A Portable outlet device (electrical portable outlet device (EPOD) or multi-outlet power board) is a device having a single means of connection to an electrical supply (plugged into a general-purpose outlet) with one or more outlet facilities (sockets) and does not include double-adaptors. Refer to AS/NZS 3105 (Approval and test specification—Electrical portable outlet devices).

Service & Office	Service & Maintenance
	
Multi-Outlet Power Board (switched)	Multi-Outlet Power Board (switched/RCD protected)
Construction, Demolition and Maintenance	
	
Portable Socket Outlet Assemblies (PSOA)	Auxiliary socket outlet Panel (ASOP)

1.14 Power supply cord

Means a flexible cable or flexible cord, for supply purposes, which has one end connected to a plug with pins designed to engage with a socket-outlet, and the other end connected to terminals within the equipment.

Example of a power supply cord

1.15 Power supply device

Means an electrical device that provides an output not exceeding 50V ac or 120V ripple free dc; so as to provide supply to separate equipment. A power supply is also known as a plug pack, extra low voltage power supply unit or an ac adaptor.

Examples of power supply devices	
	
Example of an ac adaptor.	**Example of a plug pack**

1.16 Rural industry work

(a) Rural industry work is work—

(i) in the cultivation of any agricultural crop or product whether or not grown for food; or

(ii) in the rearing and management of farm animals; or

i. Examples of farm animals - livestock, bees, worms.

(iii) in the classing, scouring, sorting or pressing of wool; or

(iv) that is aquaculture; or

(v) in flower or vegetable market gardens; or

(vi) for clearing, fencing, trenching, draining or otherwise preparing land for anything stated in paragraph (i), (ii), (iv) or (v).

(b) Rural industry work includes work that is construction work, manufacturing work or office work performed for the purposes of an activity mentioned in (a) if—

(i) the work is performed by a person conducting a business or undertaking, or an employee of that person; and

(ii) the product of the work is to be used in the business or undertaking; and

(iii) the work is performed on premises on which the product of the work is to be used.

Examples of construction work or manufacturing work—

- repairing farm machinery, including, for example, tractors and implements
- making farm machinery, including, for example, cattle crushes, spray booms or fruit picking booms
- building sheds

(c) Rural industry work does not include work to which rural industry work is only incidental.

1.17 Safety Switches or Residual Current Devices (RCDs)

Safety switch means a type 1 safety switch or a type 2 safety switch.

Type	Description	General Guidance – Use
Type I	Type I safety switches have a residual current rating not exceeding 10 milliamps and a tripping time within 30 milliseconds.	Type I safety switches are the most sensitive and are required for electrical equipment that is directly connected to people, for example patients in hospitals or dental practices.
Type II	Type II safety switches have a residual current rating greater than 10 milliamps but not exceeding 30 milliamps and a tripping time within 300 milliseconds.	Type II safety switches are most suitable for personal protection against injury including electric shock.

Safety switch means a device intended to isolate supply to protected circuits, socket outlets or electrical equipment in the event of a current flow to earth that exceeds a predetermined value. The safety switch may be fixed or portable.

(a) ***Non-Portable*** (or 'Fixed') RCDs

Non-portable (or 'fixed') RCDs are RCDs that are installed at either the switchboard (see Figure 1) or a fixed socket outlet (see Figure 2).

Figure 1 Switchboard safety switch

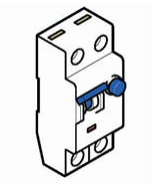


Figure 2 Fixed socket outlet safety switch

(b) ***Portable*** RCDS

Portable RCDs are generally plugged into a socket outlet and, depending on design, may protect one or more items of electrical equipment.

Figure 3 Portable safety switch fitted directly to power cable

Figure 4 *Portable safety switch protected power board*

1.18 Specified Electrical Equipment

As per Electrical Safety Regulation (s97), means -

(a) for the performance of amusement work, manufacturing work or rural industry work, the following equipment (other than an amusement device or amusement ride)—

(i) a cord extension set with a current rating of not more than 20 amps;

(ii) an electrical portable outlet device with a current rating of not more than 20 amps;

(iii) electrical equipment, other than a portable safety switch, that—

(A) has a current rating of not more than 20 amps; and

(B) is connected by a flexible cord and plug to low voltage supply; and

(b) for the performance of office work or service work—

(i) a cord extension set with a current rating of not more than 20 amps; or

(ii) an electrical portable outlet device with a current rating of not more than 20 amps; or

(iii) electrical equipment, other than a portable safety switch, that—

(A) has a current rating of not more than 20 amps; and

(B) is connected by a flexible cord and plug to low voltage supply; and

(C) is moved during its normal use for the purpose of its use.

1.19 Service Work

Means work that is not amusement work, construction work, manufacturing work, office work or rural industry work.

Examples include: cleaning a motel, cooking in a restaurant, providing health services at a health facility, selling goods from a shop, teaching at an education facility, caring for children at a child care centre

1.20 Stated Electrical Risk Factor

As per Electricity Regulation 2006 [s120 (5)], stated electrical risk factor means any of the following—

(a) use of plug-in electrical equipment in an unroofed area or wet area, including, for example, a hose down area;

(b) use of personally supported electrical equipment if the electrical supply cord is subject to flexing while the equipment is being used;

(c) use of plug-in electrical equipment that is exposed to environmental factors that subject the equipment to abnormal wear or deterioration.

2. PURPOSE

This Procedure provides a practical summary of the test and tag requirements outlined in the Griffith University Electrical Safety Policy and Electrical Safety Procedure and relevant Australian Standards.

3. SCOPE

This Electrical Safety Procedure (Test and Tag) specifies requirements for the safety inspection and testing of electrical equipment which is low voltage and is connected to the electrical supply by a flexible cord and plug, and that

- Is new equipment placed into service for the first time;
- Is already in-service;
- Is available for hire.

This procedure also specifies procedures for the safety inspection and testing of ***Safety Switches*** or Residual Current Devices (RCDs).

The Electrical Safety Procedure outlines the requirements for inspection and testing of electrical equipment and/or an electrical installation that has been:

- has been designed and/or manufactured
- has been imported
- has been gifted or procured as second-hand equipment
- is being commissioned following installation
- has been serviced or repaired.

4. ROLES & RESPONSIBILITIES

4.1 University Occupied Spaces

Elements are responsible for general and electrical safety in their own areas and the workplaces of their general and academic staff.

This includes ensuring all electrical equipment under their ***management or control*** is electrically safe and the ongoing testing and tagging of relevant electrical equipment and the provision and testing of portable safety switches where required is conducted in accordance with this procedure.

Campus Life is responsible for the testing program and coordination of resources to ensure fixed RCD's and electrical infrastructure are functionally tested at prescribed intervals.

4.2 Tenanted spaces

External parties leasing University space with non-University electrical appliances and equipment which are brought onto and used within the leased work area are responsible for:

(a) ensuring the electrical equipment is safe

(b) the testing and tagging of the specified electrical equipment

(c) the provision of safety switches as required

5. GENERAL OBLIGATIONS

- All electrical equipment should be in good working order with no frayed or defective cords or leads or plugs.
- Electrical cords/leads and plugs must be located where it is not likely to suffer damage and protected from damage, including damage by liquids.

- All staff are responsible for reporting electrical hazards, incidents or damaged electrical equipment
- Damaged/defective cords or electrical equipment must be immediately removed from service and be labelled with a 'CAUTION – Out of Service' tag in accordance with the Griffith University Electrical Safety Procedure.
- Double adaptors must not be used at any time.
- Piggy back plugs are only permitted to be used for specific applications in stage, theatrical and production-based activities as outlined in the Griffith University Electrical Safety Procedure.
- Where multi-outlet power boards are used, the requirements of the Griffith University Electrical Safety Procedure must be met.
- Prior to using specified electrical equipment, the user will ensure that the electrical equipment is within test date. If the electrical equipment is not within test tag, it shall not be used until a competent person has tested, tagged and recorded the test result.

6. GENERAL TEST AND TAG REQUIREMENTS

Specified electrical equipment must be electrically tested and tagged by a competent person in accordance with the Electrical Safety Regulation and at prescribed intervals specified in the AS/NZS 3760 In-service safety inspection and testing of electrical equipment and for construction and demolition sites, AS/NZS 3012 Electrical installations—Construction and demolition sites.

Specified electrical equipment is defined in this procedure (as per ES Reg s97),

As a general guide specified electrical equipment is (other than a portable safety switch), electrical equipment that has a current not more than 20 amps and comprises:

- any cord extension set (e.g. extension lead) or portable outlet device (e.g. power board);
- any plug-in1 electrical equipment used for Amusement work, Construction work, Rural Industry work or Manufacturing work; or
- any plug-in electrical equipment used for Service work or Office work which is moved during its normal use for the purpose of its use

  e.g. hand-held and/or moved while in operation or can be readily moved while connected by plug to a general-purpose outlet

The key requirements for ensuring electrical safety include inspection and testing of electrical equipment by a competent person at the required interval. At the completion of any tests, any specified electrical equipment must have a durable tag attached at the time of inspection and testing showing the date by which the equipment is to be re-inspected and re-tested.

The interval required and the type of electrical equipment that must be inspected and tested depends on the type of electrical work being carried out.

Refer to **APPENDIX A** for test intervals.

Note: subject to a tolerance of two weeks, or as varied by a responsible person based on a risk assessment

6.1 Different types of electrical work - Specified electrical equipment

The electrical legislation identifies six types of electrical work associated with specified electrical equipment. The types of work include:

6.1.1 Service/office work

A significant portion of electrical work under Service Work or Office Work.

[1] connected by a flexible cord and plug to low voltage supply

6.1.2 Construction work

Responsibilities for Construction / Building Work are identified in the Griffith Construction Work Policy. (i.e. Campus Life and Digital Solutions)

6.1.3 Manufacturing work

Manufacturing Work may be performed in workshops performing maintenance or certain learning and teaching activities e.g. fabrication.

6.1.4 Amusement work

Amusement Work may be conducted during Open Days or other public events.

6.1.5 Rural industry work

Rural Industry Work may be conducted in some research activities.

6.2 New equipment ("New to Service Tag")

In Australia, when the equipment is new, the supplier is deemed responsible for its initial electrical safety. New equipment need not be tested but shall be examined for obvious damage.

Where deemed compliant, the owner or responsible person shall ensure it is tagged (e.g. attach a 'NEW To SERVICE' tag). A new to service tag shall be applied that includes the following information: (as required by AS/NZS 3760 section 2.4.2.1 (c))

- Wording, "New to Service",
- Date of entry to service
- Date when next test is due
- Statement, "This appliance has not been tested in accordance with… AS/NZS 3760".

6.3 Hostile environments

A 'hostile operating environment' is a term used to describe an environment where 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. This includes, but is not limited to mechanical damage, exposure to moisture, heat, vibration, corrosive chemicals, and dust.

6.3.1 Hostile environments (specified electrical equipment)

In cases of specified electrical equipment being used in hostile environments (i.e. exposed to operating conditions that are likely to result in damage to the equipment or a reduction in its expected life span), where there is sufficient risk of damage:

- ensure the equipment will be tested and tagged at a minimum of every 12 months,
- ensure the equipment is connected to a safety switch (RCD) to increase the level of protection to users.

For office work, examples include laptops and chargers, common use student printers, electric hole-punches, and electric staplers in public library spaces.

6.3.2 Hostile environments (other electrical equipment)

In the case of *general electrical equipment* (other than specified equipment) used in hostile environments, in addition to general care and undertaking testing following maintenance (service/repair), the risk of electrical damage should be assessed in deciding whether to test and tag. Where there is sufficient risk of damage:

- implement a test and tag regime for the equipment,
- connect to a safety switch (RCD) to increase the level of protection to users.

Note: To avoid unwanted tripping where equipment is protected via a connection to a portable RCD or connection to a socket-outlet with a fixed RCD and/or circuit overcurrent protection, consideration should be given to the nature of electrical equipment and load likely to be connected.

6.4 Equipment supplied from cord sets

Requirements stated in AS/NZS 3760:2010 Section 2: “For equipment that is supplied by cord set, both the cord set and equipment need to be tested and tagged separately.”

To avoid ambiguity:

(a) For ***electrical equipment*** that is supplied by ***cord set*** (that can be unplugged from each other) - both the cord set and equipment need to be tested and tagged separately.

Example of electrical equipment supplied by a cord set which can be detached

(b) For equipment that has a ***power supply device*** (e.g. AC Adaptor) and ***cord set*** (that can be unplugged from each other) - both the power supply and the cord set need to be tested and tagged separately.

Example of a power supply device

Example of a cord set

7. SPECIFIC TEST AND TAG REQUIREMENTS

7.1 Personal Electrical Equipment

If staff or students bring personal electrical equipment* or domestic or other appliances (e.g. sandwich makers, coffee makers, electric jugs, fans, vacuum cleaners) into the workplace, (whether or not it is for university purposes) it must be tested and tagged prior to use at the workplace or being used for University purposes. The relevant manager is responsible for ensuring that untested personal electrical equipment/alliances are not used.

If students bring electrical equipment for use in research/projects/artworks etc. the relevant academic supervisor must ensure it is tested and tagged before use. Portable bar heaters or fan heaters are not permitted in any University buildings (including Residential Colleges) due to the high fire risk.

It is at the discretion of the responsible manager as to whether the personal electrical equipment or domestic or other appliances is approved for use in the workplace (including residential accommodation). This is due to either the cost of testing and tagging the personal electrical equipment or other reasonable operational or safety factors. In all cases, if the equipment does not carry a RCM (Regulatory Compliance Mark), the equipment is not authorised to be used in the university workplace.

** This provision does not apply to laptop computers and mobile phones.*

7.2 Stage, theatrical, performance and other production-based equipment

All electrical equipment exceeding 20 amps, as used in theatres and cinemas, must be tested and tagged by a fully-licensed electrician every 6 months.

The use of double adaptors is prohibited. Piggy back plugs can be used in these areas as outlined in the Electrical Safety Procedure. Other suitable types of electrical distribution equipment must be considered and be verified as electrically safe by a trained and competent electrical worker.

Where a non-portable (or 'fixed') safety switches are not been installed at either the switchboard or a fixed socket outlet - all lighting panels / dimmers must have RCD protection. Maximum loads of lighting dimmers shall not be exceeded to avoid overloading and a fire hazard.

7.3 Lending/Hire of Equipment

University electrical equipment which is loaned/hired to staff/students **will not be** regarded as Hire Equipment. For staff/students the equipment must be inspected visually before being loaned out and test and tag should be conducted every 6 months.

University electrical equipment which is loaned/hired to a person or entity external to the University **will be** regarded as Hire Equipment. For hired equipment it must be inspected visually before being hired out and test and tagged every 3 months.

Records of test results must be kept for a minimum of five years by the relevant department.

7.4 Electrical equipment designed and constructed by Griffith University

The electrical equipment will be returned to University school or department nominated as the original equipment manufacturer (OEM) every 12 months for retesting. For example:

- Griffith Technical Solutions (e.g. electronics and mechanical departments); and
- School of Engineering and Built Environment (e.g. electronics, electrical/ power, mechanical schools).

If the equipment is interfered with by students, staff etc. (removing covers etc.), the electrical equipment that has been interfered with is to be returned to OEM for retesting and/or tagging.

7.5 Fixed or stationary equipment (Connected to an Electrical Installation)

AS/NZS 3760 - In-service safety inspection and testing of electrical equipment does not apply to fixed equipment (except RCDs) or stationary equipment connected to wiring that forms part of the electrical installation and hence falls within the scope of AS/NZS 3000.

Where the equipment wiring is not flexed in normal use nor exposed to damage nor is in a hostile environment, does not normally constitute a hazard sufficient to warrant routine in service electrical safety testing. Accordingly, the testing of such equipment is not required by this Standard.

Where the equipment wiring is flexed on equipment which is moved only for restocking, maintenance or, cleaning, for example, in-service testing is required. For such fixed equipment or stationary equipment, it is sufficient, to do a visual inspection and earth test only since insulation testing requires disconnection. For carrying out the earth test on such equipment additional knowledge and processes are required.

8. SAFETY SWITCHES OR RESIDUAL CURRENT DEVICES (RCDS)

Fixed or portable safety switches must also be tested by a competent person according to the table below.

Teaching/Research or Office Areas - Inspection and Testing Intervals (AS/NZS 3760:2010 Table 4)	
Type 1 or 2 Safety Switch – Fixed	▪ Inbuilt test button – every 6 months ▪ By a competent person at least every 2 years
Type 1 or 2 Safety Switch – Portable	▪ Inbuilt test button – every 3 months ▪ By a competent person at least every 2 years
Patient Areas (Cardiac and Body Protected Areas) - Inspection and Testing Intervals (AS/NZS 3003:2018)	
Type 1 – Fixed	▪ By a competent person every 12 months

For equipment on construction and demolition sites, refer to the periodic verification intervals specified in Table 7 of AS/NZS 3012:2010 Electrical Installation – Construction and demolition sites.

9. ARRANGE FOR TESTING & TAGGING

9.1 Arrange for testing & tagging

The Campus Life Intranet (Test and Test Providers) identifies the names of suitable electrical contractors or competent persons who are trained and competent to test and tag. Other contractors may be sourced provided they are competent in Test and Tag. Groups and Elements may arrange for the test and tagging to be undertaken by their in-house competent person.

9.2 Training and Competency

For employees or contractors to undertake testing and tagging work at Griffith University, the person must:

- Hold a current electrical licence under the Electrical Safety Act 2002, or
- Be competent in Test and Tag (UEENEEP026A – Conduct in service testing of electrical cord connected equipment and cord assemblies), and
- Be registered with Campus Life as a competent person to conduct electrical test and tag.

10. ACTION RESULTING FROM INSPECTION AND TESTING

10.1 Non-compliant equipment (Unsafe electrical equipment)

Where in-service inspection or testing identifies equipment, which fails to comply with the criteria given in this Standard, the equipment shall be appropriately labelled to indicate that the equipment requires remedial action and warn against further use.

Such equipment shall be withdrawn from service. Ensure that any unsafe electrical equipment at the workplace -

(a) is disconnected, or isolated, from its electricity supply[2], and

(b) tagged “OUT Of SERVICE”; and

(c) once disconnected or isolated:

[2] *Undertake only where safe to do so; notify Facilities Management where a competent person will be provided to assist*

(i) is not reconnected until it is repaired or tested and found to be safe; or

(ii) is replaced or permanently removed from use.

(d) electrical equipment involved in a dangerous electrical event or serious electrical incident must be kept or inspection and/or regulator investigation

All defective equipment must be removed from service immediately and be labelled with a 'CAUTION – Out of Service' tag.

Minimum criteria for Out of Service tags	
Front *Back* 	Minimum Criteria: • Be predominantly yellow background with black or black background text; • Prominently display the words "Out Of Service" or similar; • Allow for attachment to a device such as a hole on at the top of the tag; • Allow the following information to be recorded on the tag: – Name of the person placing the tag; – Date of placement; – Reason for placing tag – Name of the person who removed the tag.

The choice of remedial action, disposal or other corrective action shall be determined by the owner or the person with management control of the electrical equipment

10.2 Compliant equipment

10.2.1 Tagging

Following testing, compliant equipment shall be fitted with a durable, non-reusable, non-metallic tag and may be colour coded to identify the period in which the test was performed, and shall include all of the following information as a minimum:

(a) The name of the person or company who performed the test;
(b) The test or inspection date, a retest date and a reference to AS/NZS 3760;

Special techniques are not be required to identify the equipment.

NOTE: This shall not preclude tags from also bearing a code to facilitate electronic data collection.

10.2.2 Test & Tag Log

For the performance of test and tag work, the University Group or Element shall maintain a log of equipment and testing undertaken (including test date) as well as details of the testing method and person testing the equipment (in-house or contractor)

10.3 Calibrated Test Equipment

Workers shall use only test instruments, safety equipment and PPE which has been tested and is within due test date.

Refer to CLF-SAF-SOP-012 Electrical Test Instrument and Safety Equipment Maintenance Procedure

All equipment used for the testing of electrical circuits including voltage, polarity, insulation and earth resistance and other prescribed electrical testing requirements will be calibrated to meet manufacturers and Australian Standards calibration requirements. This equipment will be listed on an Electrical Test Equipment Calibration Register in each Element[3].

The Electrical Test Equipment Calibration Register will be kept for a minimum of five years for historical and internal auditing purposes.

[3] Electrical Contractors undertaking testing shall maintain their own test instrument calibration register

11. INCIDENT NOTIFICATION AND REPORTING

Electric shocks often result from people making contact with unprotected energised parts of electrical equipment and earth. Contact with energised parts may occur by touching:

- bare conductors
- internal parts of electrical equipment
- external parts of electrical equipment that have become energised because of an internal fault
- metallic or other conductive equipment that has inadvertently become live.

Contact with earth occurs through normal body contact with the ground or earthed metal parts.

11.1 Medical Attention

Any person receiving an electric shock or involved in an electrical incident contributing to an injury should seek medical attention immediately. Care shall be taken to ensure that other personnel are not exposed to potential hazards.

NOTE: The full effects of an electric shock or an electrical incident might not be immediately obvious, but symptoms may materialize later.

11.2 Reporting

Any electric shocks or "tingles" from electrical equipment or electrical infrastructure (wiring, switches or plugs) or any minor damage caused by electricity (smouldering, fire etc.) must be reported immediately to the Campus Life Maintenance Hotline Ext 8888 on all campuses and entered into GSafe.

Damaged or defective electrical equipment is to be reported to the Maintenance Hotline Ext 88888 and/or via the Facilities Assist Application (https://appclf.griffith.edu.au/facilities-assist).

All electrical hazards and incidents including notifiable incidents to the Electrical Safety Office (e.g. serious electrical incidents and dangerous electrical events) must be reported in accordance with the Griffith University Reporting and Recording Procedure for incidents, injuries, dangerous incidents, hazards and near misses.

12. REVIEW OF ELECTRICAL SAFETY (TEST AND TAG) COMPLIANCE

Corporate Services (Health and Safety) will sample the level of compliance to this procedure. The representative sample will consider risk exposure and any historical electrical events that exposed employees and students to electrical risks. In consultation with the Elements, the audit sample will be designed to provide evidence to the Vice President (Corporate Services) and other element stakeholders, of electrical safety compliance across all Griffith University workplaces.

APPENDIX 1

REQUIREMENTS FOR INSPECTION, TESTING & TAGGING

CONSTRUCTION WORK (Construction work or work done in conjunction with construction work including work to erect, construct, extend, alter, convert, fit-out, commission, renovate, repair, refurbish, disassemble or decommission a structure, or part of a structure)	
Specific Requirements ▪ If there is no construction wiring, specified electrical equipment must be connected to a type 1 or 2 safety switch. ▪ All electrical equipment for the performance of work must be in accordance with AS/NZS 3012 Electrical Installations – Construction and Demolition Sites.	
Portable electrical equipment	▪ Test & tag by a competent person every 3 months
Type 1 or Type 2 Safety Switch – Fixed	▪ Test with inbuilt test button monthly ▪ Test & tag by a competent person every 12 months
Type 1 or Type 2 Safety Switch – Portable	▪ Test with inbuilt test button immediately after it is connected and immediately before it is used for the first time each day ▪ Test & tag by a competent person at least every 3 months

MANUFACTURING WORK (Assembly, disassembly, fabrication, installation, maintenance, manufacturing, refurbishment or repair work)	
Specific Requirements Specified electrical equipment must be connected to a type 1 or 2 safety switch. ▪ in a permanent workplace - be connected to a socket-outlet for which a type 1 safety switch, or type 2 safety switch, that is not portable, is installed ▪ If not in a permanent workplace under university control –be connected to a type 1 safety switch or type 2 safety switch is required	
Manufacturing Work – Inspection and Testing Intervals	
Specified electrical equipment	▪ Test & tag double insulated equipment by a competent person every 12 months ▪ Test & tag equipment which is not double insulated by a competent person every 6 months ▪ Must be connected to a Type 1 or Type 2 safety switch
Type 1 or Type 2 Switch – Fixed	▪ Test with inbuilt test button every 6 months ▪ Test & tag by a competent person every 12 months
Type 1 or Type 2 Switch – Portable	▪ Test with inbuilt test button daily or before each use ▪ Test & tag by a competent person every 12 months

RURAL INDUSTRY WORK Includes work in the cultivation of any agricultural crop or product whether or not grown for food; or in the rearing and management of farm animals, or work that is aquaculture or work at clearing, fencing, trenching, draining or otherwise preparing land for these activities.	
Specified electrical equipment	▪ Must be visually inspected for electrical safety defects before it is connected to a socket-outlet ▪ If rural industry work is proposed to be performed, the proposed work is assessed to decide whether it involves a ***stated electrical risk factor*** ▪ If the proposed work involves a stated electrical risk factor, control measures are implemented to prevent the electrical risk from the stated electrical risk factor; ▪ If specified electrical equipment involves a ***stated electrical risk factor***, the specified electrical equipment must either be connected to a type 1 safety switch or type 2 safety switch; or inspected and tested at least annually by a competent person ▪ Control measures are implemented for the risk of electric shock or burns from electrical welding work performed in the business or undertaking, including the wearing of protective clothing, gloves and footwear.

SERVICE WORK AND OFFICE WORK Service Work – any work, which is not Amusement Work, Construction Work, Manufacturing Work, Office Work, or Rural Industry Work (e.g. teaching, research, theatre performance, cleaning & catering services, childcare.) Office Work - Office-related work	
Inspection and Testing Intervals	
Service work **Specified electrical equipment**	▪ Test & tag by a competent person every 12 months
Office work **Specified electrical equipment**	▪ Test & tag by a competent person every 5 years
Service work & Office work **Type 1 or Type 2 Switch – Fixed**	▪ Test with inbuilt test button immediately after first connection & then every 6 months ▪ Test & tag by a competent person every 2 years
Service work & Office work **Type 1 or Type 2 Switch – Portable**	▪ Test with inbuilt test button every 3 months ▪ Test & tag by a competent person every 2 years

APPENDIX 2

GRIFFITH UNIVERSITY EXAMPLES OF SPECIFIED ELECTRICAL EQUIPMENT

The following examples are provided for guidance to select the appropriate test and tag interval for different areas and locations within Griffith University facilities. Refer to Appendix 1 for the appropriate test intervals.

	Work Type					
	Construction	**Manufacturing**	**Rural Industry**	**Service**	**Office**	**Amusement**
Typical Locations	Room renovation, Demolition, New construction work	Workshops, Some activities in research /laboratory spaces	Water research ponds, Animal stock yards, Green-houses	Staff kitchens, Student refectories, Teaching spaces, Concert halls, Rest rooms, Student libraries	Office areas (not including staff kitchens), Offices in workshops, Staff offices in teaching buildings	Careers fair
Typical specified electrical equipment	Portable electric hand tools (grinders, drills, engraving tools, etc.), Extension cords, Lead lights, Portable vacuum cleaner, Etc.	Portable electric hand tools (grinders, drills, engraving tools, etc.), Extension cords, Welders, Pedestal fans, Etc.	Portable electrical equipment used in greenhouses, Portable welders used to repair stock yards, Portable electric water pumps, Etc.	Portable vacuum cleaner, Hand held electric tools, Data projector on trolley, Kitchen & refectory mobile appliances (kettle, sandwich press, etc.), Laptops and chargers, Common use student printers, Electric hole-punches, electric staplers etc. in public library spaces	Multi-outlet power board for desktop equipment	Extension cords, Power boards for outdoor gazebos, Portable plug-in lighting for outdoor gazebos
Equipment that is NOT specified electrical equipment in each work type	Fixed equipment	Fixed equipment such as floor-mounted drill presses, Lathes and mills, Office equipment.	Fixed equipment	Fixed equipment, such as: Fridges and freezers, Microwaves	Fixed equipment, Desktop computers, Fixed-location printers, photocopiers, faxes in staff areas	Fixed equipment