Electrical Testing and Tagging Guideline

Section 1 - Purpose and Scope

(1) The Electrical Safety Act 2002 (Qld) states that a person in charge of a business or undertaking (PCBU) must ensure specified electrical equipment is regularly and properly inspected, tested and tagged as safe.

(2) This Guideline is a supporting document to the UQ Electrical Safety Procedure. It is for the purposes of:

a. Testing and tagging of specified electrical equipment and testing of residual current devices (RCDs). Desktop computers and monitors are not specified electrical equipment, and do not require testing and tagging; except where they are installed in a hostile environment. Refer to Table 1 in the Appendix.
b. To assist in the determination of the correct requirements for testing and tagging of electrical equipment.

Electrical Competency

(3) Only a person deemed as competent (see Definitions in the Appendix) can undertake testing and tagging of specified electrical equipment.

(4) The following competencies are required to inspect, test and tag electrical equipment:

a. Knowledge of, and the ability to carry out, a visual examination of electrical equipment in accordance with AS/NZS 3760.
b. The ability to distinguish between electrical equipment that is double insulated and equipment that is protectively earthed and identify the appropriate test for each type.
c. The ability to carry out the earthing continuity tests on electrical equipment in accordance with Appendix D of AS/NZS 3760, while flexing the flexible cable.
d. The ability to carry out the insulation resistance tests on electrical equipment in accordance with AS/NZS 3760.
e. The ability to carry out tests on residual current devices (safety switches) in accordance with AS/NZS 3760.
f. Knowledge of the proper use of the relevant testing instruments and to interpret results for compliance with AS/NZS 3760.
g. An understanding of how the Electrical Safety Regulation 2013 (Qld) (ESR) applies to electrical equipment and installations at the workplace.

Section 2 - Specified Electrical Equipment

(5) The definition of specified electrical equipment as defined by the (Electrical Safety Regulation 2013) varies for different work environments. Refer to the Table 1 in the Appendix.

Outlet Adaptors

(6) International electrical outlet/plug adaptors must not be used on UQ sites in spaces requiring testing and tagging. Equipment must be inspected, modified, and certified (where required) to suit Australian standards and to confirm equipment is deemed safe for use. Other considerations can be found in the Safe Procurement and Acquisition of Plant

and Equipment Guideline (Section 4).

Power Boards

(7) Power boards are permitted under the following conditions:

a. They must not be used to supply high current consumption devices.
b. They must be individually switched, and the board must have an appropriately rated overcurrent circuit breaker incorporated.
c. Double pole self-switching type outlets that are switched on only when the power plug is inserted are acceptable where used for modular furniture (commonly seen on soft wiring systems associated with modular furniture).
d. Multiple plug boards must not be daisy chained.
e. Power boards must not be used in hostile environments or exposed to wet or moisture laden atmospheres.
f. Awareness of adequate current rating e.g., 10A (Amps) plug top.
g. Regularly inspected and tested and tagged, as specified in Table 1 of the Appendix.

Extension Leads

(8) Extension leads may be used under the following conditions:

a. For temporary applications only;
b. Not be of excessive length for the purpose (avoid coiling cable);
c. Awareness of adequate current rating;
d. Positioned such that they are protected against damage and do not create a trip hazard to persons entering the area; and
e. Regularly inspected and tested and tagged, as specified in Table 1 of the Appendix.

Electrical Medical Equipment

(9) There are additional test requirements mandated for electrical equipment commonly used in diagnostics and patient treatment or therapy. The test regime for such equipment is much more rigorous than for other items with additional tests being prescribed.

(10) Details of these additional requirements are set out in:

a. AS/NZS 4513:1995 - Medical electrical equipment - Fundamental aspects of safety Standards;
b. AS/NZS 3551:2012 - Management programs for medical equipment;
c. AS/NZS 3003:2018 - Electrical installations - Patient areas.

Residual Current Devices (RCDs)

(11) RCD testing MUST be maintained in accordance with the prescribed relevant sections of AS/NZS 3760:2022 In-service Safety Inspection and Testing of Electrical Equipment and RCDs. For environments where Electrical Infrastructure was installed prior to 1992, the use of portable RCDs must be considered as some circuits may not be protected by a fixed RCD.

Portable RCDs

(12) The testing of portable RCDs is to be arranged by the person in control of the equipment, using inducted external service providers or qualified and competent in-house resources.

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a. Push Button Testing:
    i. In construction, manufacturing and amusement workplaces push button tests must be conducted before each use or daily (whichever is the longer).
    ii. In service or office work push button tests must be carried out at three (3) monthly intervals.
b. Time/Current Testing
    i. Time/Current testing of Portable RCDs carried out by a competent person using an approved testing device shall be carried out as follows:
        - Construction – every three (3) months.
        - Manufacturing and Amusement work - every twelve (12) months.
        - Service work (excluding commercial cleaning) or Office work - every two (2) years.
        - Commercial cleaning – every six (6) months.

(13) Organisational Units are responsible for ensuring tests are performed and results recorded.

Fixed RCDs

(14) Fixed RCDs must also be functionally tested at prescribed intervals. Property and Facilities Division (P&F) will establish a program and co-ordinate resources to ensure compliance with this requirement.

(15) All fixed RCD testing must be carried out by P&F staff or by external service providers endorsed and coordinated by P&F under a contractual arrangement.

Section 3 - Responsibilities

Heads of Organisational Units

(16) Heads of Organisational Units must ensure:

a. adequate resources have been allocated for carrying out inspection, testing and tagging of specified electrical equipment and portable residual current devices;
b. a system is in place for testing and tagging of electrical equipment against the requirements;
c. effective systems are in place for rectification or safe disposal of equipment that fails inspection and testing;
d. effective systems are in place for the provision of relevant information, training and supervision; and
e. appropriate electrical safety and equipment inspection records are maintained.

Supervisors

(17) Supervisors must ensure that in their area of responsibility:

a. Inspection, testing and tagging of specified electrical equipment and testing of portable residual current devices is conducted in accordance with the Electrical Safety Procedure and this Guideline.
b. Rectification or safe disposal of equipment that fails inspection and testing.
c. Newly purchased electrical equipment complies with Australian regulatory requirements.
d. Newly purchased electrical equipment is tested and tagged prior to being placed into service, or included to the test-and-tag inspection program, to ensure they are included in next inspection round.
e. Reported faults and damage to electrical equipment are investigated and appropriate corrective actions are taken to resolve them.
f. Ensure that effective systems are in place for rectification or safe disposal of equipment that fails inspection and testing.

Staff and Postgraduate Students

(18) Staff and postgraduate students must:

a. Participate in safety induction and training, as instructed by the Supervisor.
b. Complete a visual inspection of items of electrical equipment prior to use, to verify that the test-tag is in date and flexible power lead is not damaged.
c. Perform a push button test of portable RCDs as specified in clause 12(a).
d. Where RCD devices are provided in medical installations (body protected areas), carry out a push-button test before each use.
e. Report all faulty and/or damaged electrical equipment to the supervisor and remove equipment from service in line with UQ's policies and procedures.
f. Ensure all new electrical equipment is reported to their manager prior to being placed into service.

Health, Safety and Wellness Division

(19) The Health, Safety and Wellness Division must:

a. Provide advice and guidance on interpretation of relevant legislation, Australian Standards and University requirements, specialist advice will be obtained from P&F.
b. Update HSW guidance material in accordance with legislative changes and technological developments in consultation with P&F.

Property and Facilities Division

(20) The Property and Facilities Division (P&F) must:

a. Ensure a program is in place for carrying out inspection and testing of fixed residual current devices, in accordance with requirements.

Section 4 - Appendix

Definitions

Term	Definition
Competent Person	A person who has the knowledge and skill to inspect and test electrical equipment. Knowledge and skill can be obtained through training, qualifications, experience, or a combination of these.
Electrical Equipment	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 fire or explosion; or (d) is, or is part of, a cathodic protection system.
	Specified Electrical Equipment can include items for example power boards, extension cords, handheld electrical tools such as grinders and are dependent on the environment in which they are used. Refer to the Electrical Safety Regulation 2013 for details
Stationary Equipment	Equipment having a mass exceeding 18 kg and/or are infrequently moved.
Hirer	The person or business that offers the equipment for the or hire or lease.

Term	Definition
Hostile Environment	One that the equipment or appliance is normally subject to events or operating conditions 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.
Manufacturing Work	Assembly, disassembly, fabrication, installation, maintenance, manufacturing, refurbishment, or repair, but does not include amusement work, construction work or rural industry work plant and equipment workshops.
Office Work	Includes offices and meeting rooms.
Overcurrent	A current exceeding the rated value of electrical equipment.
Portable Electrical Equipment	Equipment installed with a plug giving it the ability to be relocated or removed without the need of an electrical licence.
RCM Mark	The Regulatory Compliance Mark or RCM is a symbol utilised to show regulatory compliance under the defining standard (AS/NZS 4417.1:2012 & AS/NZS 4417.2:2020 Regulatory compliance mark for electrical and electronic equipment – Use of the mark). See linked image: RCM Mark (Regulatory compliance mark for electrical and electronic equipment)
Residual Current Devices (RCD)	A device intended to isolate electrical supply to protected circuits, socket outlets or electrical equipment in the event of a current flow to earth that exceeds a predetermined value. The RCD may be a fixed RCD or a portable RCD.
Rural Industry Work	Includes the cultivation of any agricultural crop or product, rearing and management of farm animals (livestock), clearing, fencing, trenching, draining or otherwise preparing land. It also includes construction or manufacturing work in a rural environment (repairing farm and making machinery, building of sheds)
Safety Switch	Residual Current Device (RCD)
Service Work	Not covered by another 'work'. Includes cleaning, cooking, providing a health service at a health facility, teaching, childcare in a childcare centre, retail operations (teaching and learning environments including computer laboratory, libraries, teaching spaces).
Socket Residual Current Device (SRCD)	A fixed socket-outlet with either an integrated RCD; or a separate RCD intended to be associated with the socket-outlet.
Test and Tag	The process of a certified, competent person testing electrical equipment to detect damage, wear or other conditions that may make it unsafe. The item is tagged with an inspection tag (including retest date) if it complies with the test specifications or tagged out of service if defects are detected.

Intervals for Testing Specified Electrical Equipment

(21) See linked Table 1 - Intervals for testing specified electrical equipment.

Status and Details

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Effective Date	22nd December 2022
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