Monash University Procedure

Procedure Title	Electrical Safety: Purchase and Use of Portable Electrical Equipment Procedures (Australia only)
Parent Policy	Electrical Safety Policy (Australia only)
Date Effective	24-November-2014
Review Date	24-November-2017
Procedure Owner	Maintenance and Minor Works Manager, Buildings and Property Division
Category	Operational
Version Number	1.0
Content Enquiries	F-SPolicy@monash.edu
Scope	This procedure applies to all portable Electric Equipment used on the Australian campuses of Monash University and within Monash controlled entities. It covers university sanctioned activities by staff and students of Monash University, contractors, visitors, hire companies or any other person or agency associated with university activities. Portable Electrical Equipment is an appliance that is connected to a Socket Outlet by a flexible lead and plug top. The equipment can be moved without unwiring and includes, but is not limited to, computers, microwaves, heaters, battery chargers, TV's and kettles.
Purpose	Sets out a framework for the management and use of Electrical Installations and equipment at Monash University in compliance with the Occupational Health and Safety Act 2004 and the Electrical Safety Act 1998.
PROCEDURE STATEMENT	

1. Purchase of portable electrical equipment

Any purchase of portable Electrical Equipment must be undertaken in accordance with the university's Procurement Policy and Strategic Procurement Procedures. Full details of the university's procurement framework and approved suppliers is available at http://intranet.monash.edu.au/finance/purchase-to-payment/strategic-procurement/processes/index.html

Responsibility

Any staff member, student, contractor or visitor using electrical devices on Monash University property

2. Ensuring the safe use of portable Electrical Equipment

2.1. General

There are a number of things that must be done to help ensure the safe use of portable Electrical Equipment in the workplace including:

- using only portable Electrical Equipment that is recommended under this procedure (see Section 3 below);
- visually inspecting new equipment to ensure that no damage has occurred during transport, delivery, installation or commissioning;
- arranging electrical leads so they will not be damaged - avoiding running leads across the floor or ground, through doorways and over sharp edges, and using lead stands or insulated cable hangers to keep leads off the ground;
- not using leads and tools in damp or wet conditions unless they are specially designed for these conditions; and

Responsibility

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2.2. **Risk management**

If it is believed there might be a hazard to health or safety associated with the use of the portable equipment, the risk must be identified and action taken to eliminate it, or minimise it so far as is practicable. Information and instructions on how to undertake a risk assessment are available at http://www.monash.edu.au/ohs/forms/risk-management-program.pdf.

Any hazard or injury resulting from the use of portable Electrical Equipment must be reported **immediately** using the Occupational Health and Safety Hazard and Incident Report. Alternatively the hazard/injury should be reported directly to the supervisor or local safety officer.

Responsibility

All managers/supervisors of other staff, students, contractors or visitors using portable electrical equipment on Monash University property

Any person noting a hazard or injury resulting from the use of portable Electrical Equipment

2.3. **Unsafe portable Electrical Equipment at the workplace**

The manager/supervisor in charge of a workplace where portable Electrical Equipment is used must ensure that any unsafe Electrical Equipment at the workplace is disconnected or locked out (or isolated) from its electricity supply, and, once disconnected, is not reconnected until it is repaired or tested and found to be safe or is replaced or permanently removed from use.

To ensure that unsafe Electrical Equipment is not used inadvertently before it can be tested, repaired or replaced, it should be labelled to indicate that it has been taken out of service for safety reasons pending testing and possible repair and to warn against further use.

Reporting arrangements must be put in place to ensure as far as is reasonably practicable that supervisors or line managers are advised if a worker reasonably believes that portable Electrical Equipment in the workplace is electrically unsafe or that unexpected conditions, for example flooding, render unsafe the use of portable Electrical Equipment in a workplace area.

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Responsibility

All managers/supervisors of other staff, students, contractors or visitors using portable Electrical Equipment on Monash University property

2.4. Residual Current Devices (RCDs)

Workplace fatalities can be prevented by the use of properly installed and maintained RCDs-commonly referred to as ‘safety switches'.

While RCDs significantly reduce the risk of electric shock they do not provide protection in all circumstances. For example an RCD will not isolate an electricity supply if a person contacts both active and neutral conductors while handling faulty plugs or electrical equipment with the result that electricity flows through the body, unless there is also a current flow to earth.

2.4.1. When RCDs must be provided for use in workplaces

Where practicable, appropriate RCDs should be used to minimise any electrical hazard associated with the supply of electricity to ‘plug in' electrical equipment. In the following higher-risk workplaces use of RCDs is required where:

- the normal use of Electrical Equipment exposes the equipment to operating conditions that are likely to result in damage to the equipment or a reduction in its expected life span, including conditions that involve exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust;
- Electrical Equipment is moved between different locations in circumstances where damage to the equipment or to a flexible electricity supply cord is reasonably likely;
- Electrical Equipment is frequently moved during its normal use;
- Electrical Equipment forms part of, or is used in connection with, an amusement device; and
- a circuit supplies a wet use appliance, if practicable.

Common examples of Electrical Equipment that may be used in these operating conditions, and therefore should use RCDs, include:

- hand-held Electrical Equipment-for example drills, saws, hair dryers and electric knives;
- Electrical Equipment that is moved while in operation-for example jackhammers, electric lawn mowers, vacuum cleaners, floor polishers and extension cords; and
- Electrical Equipment that is moved between jobs in ways that could result in damage to the equipment-for example electric welders, electric cement mixers, portable bench saws and extension cords.

To check whether existing RCDs are in place or whether new or portable RCDs are required, a BEIMS request must be lodged with Facilities and Services Division for the work to be undertaken. For new installations the Minimum Level Design Specifications state that when an RCD is installed it is installed in the switchboard.

Responsibility

All managers/supervisors of other staff, students, contractors or visitors using electrical devices on Monash University property

2.4.2. Non-portable (or 'fixed') RCDs

Non-portable (or 'fixed') RCDs are RCDs installed at either the switchboard or a fixed socket outlet. For new installations the Minimum Level Design and Construction Specifications state that when an RCD is installed it is installed in the switchboard.

Fixed RCDs must be installed by an appropriately licensed electrical installation worker engaged by Facilities and Services Division.

Responsibility

All managers/supervisors responsible for the installation of fixed RCDs on Monash University property

2.4.3. Portable RCDs

Portable RCDs are usually plugged into a Socket Outlet and (depending on design) may protect one or more items of Electrical Equipment.

The manager/supervisor in control of a workplace must take all reasonable steps to ensure that portable RCDs used at the workplace are tested according to AS 3760:2010 by an appropriately licensed electrical installation worker to ensure the devices are working effectively.

If an RCD is tested and found to be faulty it should be taken out of service immediately and arrangements made for its immediate replacement.

A record of testing will be provided and must be kept on the device until it is next tested or disposed of.

Responsibility

All managers/supervisors of other staff, students, contractors or visitors using portable RCDs on Monash University property

3. Use of portable Electrical Equipment on Monash University Premises

3.1. Double adaptors

The use of double adaptors is not permitted within Monash University and should be removed and replaced with EPODs (power boards) fitted with overload protection devices.

Responsibility

Any staff member, student, contractor or visitor using electrical devices on Monash University property

3.2. EPODs (power boards)

- These are to be used **only if they have overload protection**. Home-made EPODs are illegal throughout Australia and must not be used in the university.
- If an integral part of an electrical appliance or rack, and EPOD shall be fixed by the use of secure fittings in such a way that the face is in the vertical plane in a location that is not susceptible to mechanical or water damage. Where possible the cord should be fixed to reduce the weight on the EPOD electrical junction.
- Each EPOD must be plugged into a general purpose outlet (GPO). GPOs share power circuits. Be aware too many EPODs plugged into GPOs on the same circuit may overload the circuit and cause a power failure.

Responsibility

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3.3. Extension leads

These are only suitable for temporary applications. For longer term applications a new GPO should be installed or an EPOD with overload protection used. Ensure the extension lead is placed appropriately and shielded with an appropriate extension lead cover to reduce tripping hazards. Be wary of heavy equipment rolling over or impacting the lead as it may damage the insulation and wires causing shorting.

Responsibility

Any staff member, student, contractor or visitor using electrical devices on Monash University property

3.4. Fan heaters

The use of fan forced coil heaters is not permitted; these devices pose a high fire risk and consume a great amount of energy. They are often not fitted with a cut-off switch and have relatively exposed elements making them susceptible to trapping dust and debris. Where a building has insufficient heating the university will permit the use of convective panel heaters. Be aware that too many panel heaters on the same circuit may overload the circuit and cause a power failure.

Further information can be found at http://www.thermofilm.com.au/products/bliss/bliss.htm and additional details on energy conservation can be found in Energy at Monash: a guide to reducing energy consumption at Monash (pdf)

Responsibility

Any staff member, student, contractor or visitor using electrical devices on Monash University property

4. Equipment brought onto Monash University Premises from home

Any Electrical Equipment brought onto Monash University premises by staff, students, contractors or visitors:

- must have an up-to-date tagging and testing tag attached (refer to Monash University *Electrical Safety: Inspection, Testing, Tagging and Repairing Electrical Equipment Procedures*); and
- must not contravene any of *Section 2 Ensuring the safe use of portable electric equipment* (above) of these procedures.

Responsibility

Any staff, students, contractors of visitors bringing electrical equipment onto Monash University premises

Responsibility for implementation	Executive Director, Buildings and Property Division
Status	New
Approval Body	**Name**: Chief Operating Officer and Senior Vice-President (Administration) **Date**: 28-November-2014
Definitions	**BEIMS (Building Engineering Information Management System)**: the online system used throughout Monash University for the logging and tracking of maintenance and minor works requests. **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; b) • is operated by electricity at a voltage greater than Extra-low Voltage; 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, an active impressed current cathodic protection system. **Electrical Installation**: a group of items of Electrical Equipment that are permanently electrically connected together and can be supplied with electricity from the works of an electricity supply authority or from a generating source. **Electrical Portable Outlet Device (EPOD)**: a device having a single means of connection to an electrical supply with one or more outlet facilities (sockets) and does not include double-adaptors. **Residual Current Device (RCD)**: a device, often referred to as a 'safety switch', 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 RCD may be fixed or portable. **Socket Outlet**: a device that enables a detachable electrical connection of equipment to an electrical power supply. **University Premises**: buildings, land and property owned, leased and/or occupied by the university. **Voltage – Extra-low Voltage**: age that does not exceed 50 volts alternating current or 120 volts ripple-free direct current. **Voltage - Low Voltage**: voltage that exceeds Extra-low Voltage and does

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	not exceed 1000 volts alternating current or 1500 volts direct current. **Voltage - High Voltage**: voltage that exceeds Low Voltage.
Legislation Mandating Compliance	Occupational Health and Safety Act 2004 Electricity Safety Act 1998
Related Policies	Occupational Health and Safety Policy
Related Documents	AS/NZS 3000:2007: Electrical installations AS/NZS 3008.1.1:2009 : Electrical installations - Selection of cables AS/NZS 3017:2007 : Electrical installations - Verification guidelines AS/NZS 3760:2010 : In-service safety inspection and testing of electrical equipment AS/NZS 4024.1:2006 - Safety of Machinery Safe Work Australia - Managing Electrical Risks at the Workplace