Electrical Safety Policy

Synopsis

This document sets out the University of Aberdeen Electrical Safety Policy. This Policy applies to all employees of all Schools/Directorates. Parts also apply to students and contractors.

Approval

Approved by: Senior Management Team

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Revision Record

Issue	Date	Reason for Review
Draft 1	March 2023	New document for consultation
Draft 2	April 2023	Comments received from Estates and Facilities incorporated into sections 7.3, 7.7 and 7.10.
Draft 3	April 2023	Comment from IT resulting in a minor amendment to section 5.4 and comments received from Engineering and Trade Unions resulting in: • the addition of "supervisors" to section 5.6. • relatively minor changes to clarify the content of sections 5.5, 5.7, 7.5, 7.8, 7.10 and 8. • the addition of the internal reference to the Heating Policy and Procedures in section 9.1. • Some formatting changes to assist the visually impaired.
Draft 4	June 2023	Various changes made following a workshop discussion on Wednesday 24th May, including: 7.2 inserted clarification that multi-adaptors allowed if fused and conform to BS1363 ad any equipment obtained from other organisations is to be treated as owned by the university, for the purposes of this policy. 7.3 wording changed to clarify the process. 7.8 wording added with respect to staff being competent to do repairs to electrical equipment. 7.10.5 Public Access Areas section added. Appendix C – removed.
Draft 5	September 2023	Section 7.10 amended as agreed at the H&S Committee on 2nd August, prior to presenting to SMT, to allow personal double insulated mobile phone chargers to be connected to the University power supply.
Rev 1	September 2023	As Draft 5 and agreed by SMT

Contents

1.0 Purpose of the Policy

Electricity is the most useful source of energy throughout the world for lighting, power and data, and is used safely by millions of people on a daily basis. However, if not managed correctly, or misused, it presents a serious hazard that can cause injury or death, as a result of electric shocks or due to fires or explosions caused by electricity. This document sets out the University policy for electrical safety.

Such action is to be taken to ensure that potential risks associated with electrical equipment are reduced to the lowest level reasonably practicable.

Schools and Directorates should assess the risks associated with portable electrical appliances and determine a suitable inspection and testing frequency (within limits) due to knowing their equipment use and environment, to ensure items remain safe to use. Estates and Facilities are responsible for the fixed electrical installations.

2.0 Scope of Policy

This policy applies to all employees of the University of Aberdeen in all Schools and Departments and to all premises for which the University has responsibilities, including both workplaces and domestic premises such as Houses of Multiple Occupancy (HMOs).

3.0 Definitions

Term	Definition
Fixed electrical Installation	For the purposes of this policy, any part of the electrical system attached to the building for which the University is responsible, starting where the electricity supply company responsibility ends (normally at the meter) and including all equipment connected to it up to the plug sockets. (i.e., including “appliances” if they are wired in).
Portable Appliance	Any portable, transportable, or moveable appliance, machinery, or research equipment plugged in to the electrical distribution system through a socket outlet. This usually means items that can be easily moved (e.g., fans and kettles). However, it can include some larger, less transportable appliances that are not part of the fixed installation (e.g., ultra-low temperature freezers, microbiological safety cabinets, etc.).
Portable Appliance Testing (PAT)	The examination and testing of electrical appliances and equipment to ensure they are safe to use.

Term	Definition
Class I Equipment Symbol = 	Commonly called "earthed equipment". Protection against electric shock does not rely on basic insulation only. There is a means for the connection of exposed conductive parts (metal casing etc) to a protective conductor in the fixed wiring of the installation (the earth connection of the supply socket). The power cable to the appliance will include an earth continuity conductor to be connected to the earth connection of the fixed installation.
Class II Equipment Symbol = 	Commonly called "double insulated" or "all insulated" equipment. Protection against electric shock does not rely on basic insulation only. Additional safety precautions such as supplementary insulation are provided. There is no provision for the connection of exposed metalwork to a protective conductor in the fixed wiring of the installation. (i.e. the wiring does not have to include an earth conductor and so the earth pin on the socket is usually plastic, not metal). The equipment will be labelled with a symbol showing a small square within a larger square.
Class II FE (Functional Earth) Equipment Symbol = 	These are appliances which are double insulated but have an earth connection for functional reasons, rather than for electrical safety. This is usually IT or communications equipment that requires an earth connection to meet EMC (Electro Magnetic Compatibility) requirements and includes some laptop power supplies. This type of equipment should be inspected and tested as Class II equipment.
User Check	The user should always visually check the work equipment prior to use for obvious damage. It is relatively easy for people to spot and report signs of damage, overheating and misuse.
Formal Visual Inspection	Includes visual checks similar to those undertaken by the user but in a more formal and systematic manner. The plug cover should be removed where possible and a check made that the fusing is appropriate to the appliance, the cord grip and cable terminations are secure and correct, the earth connection is made where appropriate and that there is no sign of internal damage.
Combined Inspection and Testing	Taking the plug apart and checking of the correct polarity, fusing, termination of cables and cores, followed by a portable appliance test.

4.0 Legislative Requirements

The Electricity at Work Regulations 1989 require electrical systems and equipment to be operated and maintained in such in a way which avoids danger.

The legal basis of the need for the action is also identified in the Electrical Equipment (Safety) Regulations 1994, Health and Safety at Work Act 1974, the Provision and Use of Work Equipment Regulations 1998 and the Management of Health and Safety at Work Regulations 1999.

5.0 Responsibilities

5.1 University Court

The University Court has ultimate responsibility for overseeing health, safety and wellbeing matters at the University. As such, they should seek assurance that appropriate risk control measures are in place and acted upon in relation to activities across the University that could give rise to significant risk. They should be aware of significant health and safety risks across the University.

5.2 Senior Management Team

The Senior Management Team (SMT) has delegated authority from the University Court and as such, should seek reassurance that appropriate risk control measures are in place, are being implemented and that those with risk management and assessment responsibilities are trained and competent.

5.3 Estates and Facilities

Estates and Facilities are responsible for ensuring buildings are safe, including the fixed electrical installations.

It is the responsibility of the Director of Estates and Facilities to put in place its own policy arrangements to ensure that:

a) The fixed wiring of every University owned building is designed and installed to meet the legal requirements in place at the time of the new build, refurbishment, or alteration.
b) Fixed electrical installations are inspected, tested and maintained on a regular basis by competent persons in accordance with the Electricity at Work Regulations and the Institution of Engineering and Technology (IET) Code of Practice for In-Service Inspection & Testing of Electrical Equipment and that appropriate records are to be kept.
c) Only competent persons, (whether staff or contractors) are allowed to work on fixed electrical installations under the control of the University.
d) Competent contractors are appointed, on behalf of the University as a whole, to carry out inspection and testing of portable electrical equipment as necessary - See section 7 for more details.

Estates and Facilities will, with respect to a) and b) above, have these duties to the extent that they have control. In most buildings, where the University is the owner/landlord, this will be for all the fixed installations. However, this responsibility may lie with others, where specified in the lease.

Where the University does not own a building, but leases it from others, Estates and Facilities must ensure the responsibilities are clear and, dependent upon what is specified in the lease, either:

i. Inspect, test and maintain the installations (e.g., where the University has a “full repairs and maintenance lease) or
ii. Carry out periodic checks/monitoring to reassure itself that those responsible for the maintenance are discharging their responsibilities.

5.4 Digital and Information Services

5.4.1 Desktop Services

Desktop Services are responsible for University Owned personal computers (PCs) and laptops under warranty for devices connected to the University network (and supporting operating system.

They will:

- Replace personal computers (PCs) and laptops every 4 - 5 years for staff and postgraduate research students and classroom / lecture theatre devices, (but Schools and Directorates are responsible for any devices they choose to keep outside those arrangements).
- Maintain an asset register of warranty expiry dates and replace Technology Renewal Program eligible devices when they go out of warranty.
- Maintain an asset register of new monitors, matching PCs/laptops and monitors which includes procurement/purchase information date.
- Replace power cords and monitors as necessary, if discovered to be damaged or fault within the warranty period.
- Conduct IT audits of teaching, support and other buildings e.g., checks on network ports, including IT equipment (PCs, laptops) in central computer labs.

Note: The above arrangements negate the need for portable appliance testing but not the users' visual inspections.

5.4.2 Data Centres

The data centre staff will:

- Maintain an asset register of all Data Centre IT equipment.
- Ensure that, wherever practicable, all University owned equipment is maintained under maintenance contracts either with the manufacturer (if within initial 3-to-5-year date) or with an external hardware only contract (for items over 5 years).
- Replace servers and equipment generally on a 5-to-7-year cycle, including the power cables.
- Carry out visual inspection of the data centres, where the Data Centre is University owned or where its equipment is installed.
- Actively monitor all hardware, power supplies, temperature and humidity within the University owned/operated data centre.

Note: The data centres are shared environments. The University of Aberdeen owns the Edward Wright Data Centre, but this is a shared space in which there is hardware hosted for other organisations and the University has equipment in data centres owned by others.

5.5 Heads of School and Directors

It is the responsibility of each Head of School and Director to ensure that:

- All portable and transportable electrical equipment in areas under their control is inspected, tested and maintained at appropriate and regular intervals. *
- The risks associated with portable electrical appliances are assessed and that a suitable inspection and testing programme is determined to ensure the items remain safe to use using the information contained in Appendix A as an initial basis, and any deviation from the times stated should be justified.
- All new electrical equipment is assessed as safe for use as stated in this policy and no forbidden items are used - See section 7.2.
- That personnel who perform testing are competent University employees or external contractors.
- Members of staff are familiar with the hazards of the electrical equipment they use and understand basic safety precautions.

*Note: Schools are responsible for any IT devices they purchase themselves, if not through Digital and Information Services.

5.6 Line Managers and Supervisors

Line managers and supervisors are responsible for ensuring that:

- Risk assessments consider the risks associated with use of electrical equipment and put in place control measures which limit the risks to their staff – See section 7.1.
- Their staff are made aware of, and adhere to, the requirements of this policy.

5.7 Employees, Students and Visitors

Employees must co-operate with their employer to ensure these arrangements are complied with, to ensure the safety of themselves and anyone else who may be affected.
Non-employees, such as students, residents and other visitors also have a common law duty of care to others.

They must:

- Not plug into the University electrical system any electrical equipment which has not been demonstrated to be safe - See section 7.2.
- Visually check each piece of electrical equipment before it is used – See section 7.4.
- Report any faults found during inspections and not use equipment which is faulty (e.g., damage to casing, cables, plugs, etc.).
- Follow any rules which apply with respect to electrical safety in specific situations (e.g., Halls of Residence, Houses of Multiple Occupancy, in areas where a potentially explosive atmospheres may exist, on construction sites etc.)

6.0 Fixed Electrical Installations

Estates and Facilities are responsible for ensuring that the fixed electrical systems are safe for occupiers of buildings under the control of the University of Aberdeen, up to and including the electrical outlet sockets.

Where Schools or Departments wish to extend, or alter, the fixed wiring system within a building, the work must be arranged through Estates and Facilities.

7.0 Portable Electrical Equipment

7.1 Risk Assessment

Managers should consider electrical safety when carrying out risk assessments for staff in their area of control. Although the use of electrical equipment is commonplace and normal it should not be assumed that it is always the most appropriate and safest option.

Consideration should be given to the following hierarchy, in order:

1. Substitution – Use of alternative sources of energy e.g., pneumatic equipment, if assessed to be a safer option.
2. Reduction of voltage – Use of the lowest practical voltage, such as 110V (which is the norm on construction sites), battery operated / rechargeable equipment (which also reduces trip hazards etc. associated with cables) low power L.E.D. lights etc.
3. Protection of plugs, sockets, cables and equipment – Specifying equipment for use in adverse conditions, such as outside, in wet or potentially explosive atmospheres – See section 7.3.
4. Emergency shut offs for higher risk equipment – Automatic or manual switching off of individual pieces of equipment or whole circuits (e.g., in a lab) in case of fire or another emergency.
5. Inspections, testing and maintenance – to ensure equipment remains is safe to use.
6. Information, instruction and training – to ensure staff use the right equipment for the job, correctly and safely.
7. Personal Protective Equipment – Used as a last resort, to protect against any residual risk. In the context of electrical safety this should only be necessary for trained and competent staff, such as qualified electricians, who work on equipment which must be live in order to carry out testing.

Note: This list is not exhaustive and does not cover the fixed electrical installations.

7.2 New Electrical Equipment

No second hand or privately owned equipment is to be used for work purposes, except in exceptional circumstances – See section 7.10 below. For the purposes of safety, all electrical equipment obtained from other organisations, whether purchased, transferred, or loaned, is to be treated as owned by the University.

Multi socket adaptors, which allow two to four sockets to be plugged directly into a mains socket (see images below) **must not** be used, unless they have a separate fuse for the adaptor and conform to BS1363. This is mainly because they can lead to the overloading of sockets and circuits.

Only one piece of equipment should be powered from each socket. If there are not enough sockets available, arrange to get an approved extension lead.

Note: Multi-socket extensions are permitted, provided they are purchased as single items and conform to the same standards. Extensions must not be plugged into each other (daisy chained) as this may result in overloading of circuits, risking a fire or other injury. Instead obtain an extension with a longer cable.

Similarly, socket covers, which are normally plastic and fit over sockets to prevent their use, **must not** be used as there is no recognised standard and they can break in such a way that they over-ride the safety features of the sockets.

Examples of multi socket adapters.

Examples of socket covers.

Newly purchased/installed electrical equipment will not be subject to formal visual inspection and testing for at least the first year, provided that either:

- The equipment is UKCA (United Kingdom Conformity Assessment) marked, accompanied by user instructions and, where relevant, a Declaration of Conformity, or,
- If purchased from outside Great Britain it is verified as electrically safe by the importer or supplier and UKCA (UK Conformity Assessment) marked.

But before being put into use it will be necessary to undertake user checks. In the event of any signs of damage, the equipment must not be put into use and be returned to the manufacturer or supplier.

If the equipment is at a high risk of physical damage / moved frequently, it will be subject to formal inspection and testing according to the risk assessment guided by the initial inspection frequencies outlined in Appendix A.

Electrical items purchased by Schools and Departments should be notified to the Technical Resources Manager, Local Safety Coordinator, Supervisor or School Administration Manager, in order that they can be added to the Portable Appliance Register of equipment to be subject to formal inspection and testing.

7.3 Electrical Equipment for use in hazardous Areas

Hazardous areas (where an explosive atmosphere may occur due to flammable gases or volatile liquid vapours) are classified according to BS EN 60079-10-2015 and must comply with the appropriate part of these standards. Electrical equipment in hazardous areas must be installed and maintained by competent electrical engineers.

If you intend installing, using or maintaining electrical equipment in wet or hazardous areas you must contact Estates and Facilities. If you are not sure if your portable appliances are safe to use in these

areas, please contact the manager responsible for the area in the first instance, who will liaise with either the Health, Safety Team or Estates and Facilities for advice as appropriate.

7.4 User Checks

All users of the equipment have a duty to be vigilant and report any wear, damage, overheating and misuse to plugs, sockets, switches, cables and equipment which may expose them and others to danger. They should be encouraged to check the condition of the equipment prior to use.

7.5 Formal Visual Inspection

The most important monitoring of portable appliances is through a regular formal visual inspection. This should be carried out by someone who has been trained to perform a more thorough check of the equipment. This may include examining plugs, fuses, flexible cables, and cable clamping arrangements etc.

A check list for formal visual inspection is set out in Appendix B.

Hand-held power tools should be checked before each use using the check list in Appendix B. It is recommended that, wherever possible, this type of equipment is operated from a power breaker residual current protected safety plug, or similar device.

Anyone discovering a defect in portable equipment during these formal visual inspection checks should not use the equipment and should report the defect to their Technical Resources Manager, School/Department Local Safety Coordinator, Supervisor or School Administration Manager; the item should be taken out of use and quarantined. See also section 7.7 below.

7.6 Portable Appliance Testing

Portable Appliance Testing will consist of both an inspection and test of the equipment, where this is possible. The testing will reveal faults which would not be obvious through visual inspection including loss of earth integrity, (e.g., broken earth wire within a flexible cable and deterioration in the insulation of cables or equipment).

The inspection, requiring removal of the cover of plugs (where not of the moulded type) includes checking of the correct polarity, fusing, termination of cables and cores.

Earthed Class I equipment has a conductive, usually metal, outer casing and the earth lead of its cable is connected to this casing. The earth bond test checks if the resistance of this connection to earth is sufficiently low.

Double insulated Class II equipment has no need of an earth conductor. It has two sets of insulation to prevent the outer casing becoming live in the event of an electrical fault.
Both Classes of equipment require an insulation test.

Electrical testing is commonly done by using a portable appliance test instrument (a ‘PAT’ tester). In low-risk environments, a properly trained, competent member of staff can perform these tests using a suitable ‘off the shelf’ PAT tester on appliances disconnected from the electrical supply. In higher risk areas a more highly trained specialist may be needed to perform complex tests and to interpret the results. (See section 8 for competency requirements).

Appendix A contains the frequencies of initial inspection and testing established from the findings of HSE guidance (HSG 107). These frequencies are based on risk-based assessment. It may be acceptable to deviate slightly from these if a suitable and sufficient risk assessment justifies this.

Records of all formal combined inspections and testing for offices and related areas and formal visual inspections undertaken on behalf of the University will be kept by Estates and Facilities (Mechanical and Electrical Services) Manager.

For inspection and testing of equipment in laboratories and workshops, records will be kept by Schools and Directorates.

7.7 Faulty Equipment

Portable electrical equipment found to be defective, because of user checks, formal visual inspections or portable appliance testing, must be marked to indicate it is unsafe, the plug or plug top, removed and the appliance removed from use and stored securely.

These storage arrangements should ensure that the equipment concerned is either kept secure until safely disposed of or so that it cannot be inadvertently or intentionally used until it is repaired and verified as safe to use. In the case of an appliance which had a moulded plug, this will need to be replaced with a new plug before it is retested.

7.8 Making, Modifications and Repairs

Equipment made by the University must comply with the Electrical Equipment (Safety) Regulations 1994 but does not require UKCE marking for use within the University. Its design, safety and operation must be documented and certified safe for use by a competent electrical engineer.

Modifications to equipment need to be assessed by a competent engineer to determine whether the modifications have introduced hazards which were not present in the original design and mitigate accordingly.

Repairs to electrical equipment should only be made by staff who are competent to do so and have been given authority by a line manager/supervisor. When carrying out repairs the equipment should always be disconnected from the supply by switching off at the wall and pulling out the plug. Steps should also be taken to prevent anyone plugging it in again while the repair is being carried out.

Repaired equipment must only be returned to normal use once it has been inspected and tested and verified as safe to use.

7.9 Disposal of Equipment

Electrical equipment that is to be sold on, or which is to be donated to an external organisation or person, must also be safe and meet legal safety requirements in relation to its design and construction. This must be verified before being offered for sale or donated. Written instructions for safe operation of the equipment must also be provided for the intended recipient.
End of life disposals of electrical equipment must be in accordance with the EU's Waste Electrical and Electronic Equipment Directive (WEEE Directive). This minimises the impact on the environment, by re-using, recycling and reducing the amount of WEEE going to landfill. Advice should be sought through environment@abdn.ac.uk prior to disposing of any of the University's electrical equipment.

7.10 Equipment not owned by the University.

7.10.1 Staff must not bring use their own personal electrical equipment on University of Aberdeen premises, (e.g. kettles, microwave ovens) and on no account should persons bring heaters in from home as these are a potential fire risk.
The only exceptions to this are:

a) Double insulated mobile phone chargers
b) in "Public Access Areas" (see below) where the fixed installation is designed for the purpose, and
c) in exceptional circumstances in other workplaces for work purposes.

In such cases, where a Head of School / Department establishes that it is essential for a member of their staff to use such equipment, they are required to liaise with the Local Safety Coordinator, identifying the need and agreeing the arrangements necessary; a copy of the declaration of conformity (if less than a year old) or they are inspected and tested prior to use.

7.10.2 Contractors must comply with the University Control and Management of Contractors Policy and Health and Safety Standards for Contractors.

7.10.3 Hired Equipment. Unless part of the hire agreement, those hiring out work equipment cannot normally be responsible for the day-to-day and other pre-use safety checks which should be undertaken by the user. Staff hiring equipment for use at work must reassure themselves, as far as is reasonably practicable, that the equipment is obtained from a reputable source and has been specified and maintained so that it is safe for the intended use.

Short term hire (< 1 week) may not require testing but should be inspected before use. Extended hire (> 1 week) should be added to the portable appliance register and included in inspection and test regime; this refers in particular to heavy industrial/high risk of equipment damage.

7.10.4 Students' Personal Equipment is not considered to be work equipment and is not portable appliance tested by the University. However, it may still pose a potential risk. Students must ensure that the item, including the cable, is not mechanically damaged and that the plug is correctly wired and fused.

Residential Services managers should make arrangements to inform students about the safe use of electrical equipment in halls, including:

- No overloading of sockets.
- Safe use of extension leads and plug boards.
- Not using damaged equipment.
- Using proprietary equipment only.
- Using proprietary three pin plugs only and not having exposed live wires, taped joints etc.

Arrangements should be made by Residential Services managers to regularly check that the guidance is being followed. These arrangements include inspections conducted once a month by the Residential Services Team; this includes visual checks on portable appliances. Any flats found to be unsatisfactory are issued with a letter and a follow up inspection is conducted.

7.10.5 Public Access Areas are parts of the University buildings which are open to students and visitors, as well as staff. These often have power plug sockets, and sometime USB sockets etc.

specifically provided for personal devices. Where this is the case, they are designed with additional protection in case a faulty appliance is plugged into them.
Therefore, it is permitted to use personal equipment in these locations. However, both staff and students have a responsibility not to plug in devices or equipment which may pose a risk and are expected to carry out visual inspections before use.

Examples of such locations include the open floors in Sir Duncan Rice and the Student's Union.

8.0 Training and Competency

Persons undertaking the formal inspection, testing and repair of electrical equipment must possess the relevant technical knowledge and training to enable them to undertake the work safely. Competence is the necessary skills, knowledge, attitude, training and experience to undertake the role effectively and will include:

- Experience in working with electricity and a knowledge of the associated hazards.
- A knowledge of electrical and related safety standards and the precautions required to avoid danger.
- The ability to recognise when it is safe and unsafe to continue work with equipment in a variety of situations.

The Electricity at Work regulations states that: 'No person shall be engaged in any work activity where technical knowledge or experience is necessary to prevent danger, or where appropriate, injury, unless he possesses such knowledge or experience, or is under such degree of supervision as may be appropriate having regard to the nature of the work'.

The IET Code of Practice for In Service Inspection and Testing of Electrical Equipment states: 'Those carrying out the inspection and testing must be competent to undertake the inspection and, where appropriate, testing of electrical equipment and appliances having due regard of their own safety and that of others. The tester must have an understanding of the modes of electrical, mechanical or thermal damage to electrical equipment and appliances and their flexes which may be encountered in any environment. Training must include the identification of equipment and appliance types to determine the test procedures and frequency of inspection and testing. Persons testing must be familiar with the test instruments used and in particular their limitations and restrictions so as to achieve repeatable results without damaging the equipment or the appliance'.

Examples of training which would meet this requirement include a course based upon the IET Code of Practice or the City & Guilds 2377-22 course. Those who are qualified electricians or have other qualifications covering the information in the paragraph above may also be deemed competent.

BS 7671 IET Wiring Regulations state that persons carrying out works covered by the regulations shall be skilled, which is defined as; 'a person who possesses, as appropriate to the nature of the electrical work to be undertaken, adequate education, training and practical skills, and who is able to perceive risks and avoid hazards which electricity can create.'

It is for the Head of School/Department to decide whether a particular individual is competent to carry out work with electrical equipment, on the basis of assessment of the task, the competence of the individual and the particular job.

9.0 References

9.1 Internal References

Document Number (old / new)	Document Name
UA010 / HS-PO-035	University Control and Management of Contractors Policy.
GN040 / HS-GN-012	University Health and Safety Standards for Contractors.
GN024 / HS-GN-013	University Inspection and Testing of Portable Electrical Equipment.
GN001 / HS-GN-014	University Guidance on Electrical Extensions.
	Estates and Facilities, Heating Operation: Policy and Procedures

9.2 External References

Source Organisation	Document Name
legislation.gov.uk	The Electricity at Work Regulations 1989.
legislation.gov.uk	Electrical Equipment (Safety) Regulations 1994.
legislation.gov.uk	Provision and Use of Work equipment regulations 1998.
legislation.gov.uk	Personal Protective Equipment at Work Regulations 1992.
hse.gov.uk	Maintaining Portable Electrical Equipment; HSG107.
hse.gov.uk	Electricity at Work, Safe Working Practices; Health and Safety Executive HSG85.
Department of Heath	The Department of Health and NHS National Services Scotland 'Estates and Facilities Alert' about electrical socket covers/protectors.
Institution of Engineering and Technology	IET Electrical regulations (18th Edition at the time of writing) - BS 7671
Institution of Engineering and Technology	The IET Code of Practice for In Service Inspection and Testing of Electrical Equipment (5th edition at the time of writing)

Appendix A – Suggested Initial Maintenance Intervals

Table 1: provides the basis on which the University's broad programme of portable appliance inspection and testing, formal visual inspection and user checks is undertaken.

Type of Activity	User checks	Formal Visual Inspection	Combined Inspection and Test
Equipment hire	N/A	Before issue/after return	Before issue by the supplier.
Construction (for information only. See HSE Website Electricity in Construction for more detail).	110 V-Weekly 230 V mains – Daily/every shift	110 V-Monthly 230 V mains – weekly	110 V – Before first use on site then 3 – monthly 230 V mains – Before first use on site then monthly
Light industrial	Yes	Before initial use then 6-monthly	6 – 12 months
Heavy industrial/high risk of equipment damage	Daily	Weekly	6 – 12 months
Office information technology, e.g. desktop computers, photocopiers, fax machines	No	2 – 4 years	None if double-insulated otherwise up to 5 years
Double-insulated equipment not hand-held. e.g. fans, table lamps	No	2 – 4 years	No
Hand-held, double-insulated (Class II) equipment, e.g. some floor cleaners, kitchen equipment and irons	Yes	6 months – 1 year	No
Earthed (Class I) equipment, e.g. electric kettles, some floor cleaners	Yes	6 months – 1 year	1 – 2 years
Equipment used by the public, e.g. in Halls of Residence.	Yes (staff member)	3 months	1 year
Cables, leads and plugs connected to Class I equipment, extension leads and battery charging equipment.	Yes	Yes, 6 months - 4 years, depending on the type of equipment it is connected to	Yes, 1 – 5 years depending on the type of equipment it is connected to.

The above table is re-produced from Health and Safety Executive HSG107.

Appendix B – Portable Electrical Equipment Formal Visual Inspection Checklist

		User Check	Formal Visual Inspection
Cable	Signs of mechanical damage, overheating or corrosion.		
	Hardening of outer insulation.		
	Kinking of cable.		
	Coiling of long lengths of cable.		
Plug	Signs of mechanical damage or corrosion.		
	Signs of overheating, e.g. discolouration or distortion.		
	Cable clamp holding cable securely, where appropriate.		
	Wires connected to correct terminals and of the correct length.		
	Un-insulated ends of wires completely covered by the screws.		
	Securing screws suitably tight.		
	Fuse of correct rating fitted.		
Equipment	Metal casing damaged		
	Grommet, or other protection at place where cable passes through the casing, damaged or missing.		
	Plastic casing of double insulated equipment damaged.		
	Damaged or defective switches		