

Portable Appliance Testing Policy

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Portable Appliance Testing Policy

Summary

What is this Policy about?

This policy lays out the responsibilities and duties of the University and its employees; and the procedures for fulfilling them in relation to Portable Appliance Testing.

Who is this Policy for?

This policy is aimed at all staff and Contractors who undertake the role of Portable Appliance Testing within the University.

How does the University check this Policy is followed?

The Health & Safety Office manage the computer based record keeping system of the Portable Appliance Testing results, in conjunction with nominated PAT testers across the University.

This policy and associated procedures and documentation are subject to internal audit.

Who can you contact if you have any queries about this Policy?

Any questions about this Policy should be directed to the Health & Safety Office.

Introduction

To prevent danger arising from electrical work equipment a pre-planned preventative maintenance programme is essential, an important element of which is portable appliance testing.

This policy lays out the duties of the University and employees and the procedures for fulfilling them in relation to portable appliance testing.

Legislation

The four main pieces of legislation of specific relevance to the inspection and testing of portable electrical equipment are:

[The Health & Safety at Work Act 1974 \(HSWA\)](#)

Section 2.2 of the HSWA requires employers so far as is reasonably practicable “to provide and maintain plant and systems of work that are safe and without risk to health. Plant covers any machinery, equipment or appliances including portable appliances.”

[The Management of Health & Safety at Work Regulations 1999 \(MHSW\)](#)

In order to implement the MHSW Regulations "Every employer shall make suitable and sufficient assessment of:

- i. the risks to the health and safety of his employees to which they are exposed whilst at work
- ii. the risks to ensure the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking."

[The Provision and Use of Work Equipment Regulations 1998 \(PUWER\)](#)

- i. states "Every employer shall ensure that work equipment is maintained in an efficient state, in efficient working order and in good repair."
- ii. covers most risks that can result from using work equipment. With respect to risks from electricity, compliance with the Electricity at Work Regulations 1989 is likely to achieve compliance with the PUWER.
- iii. only applies to work equipment used by workers at work. This includes all work equipment (fixed, transportable or portable) connected to a source of electrical energy.

[The Electricity at Work Regulations 1989 \(EAWR\)](#)

Regulation 16 – “Persons to be competent to prevent danger and injury” 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.”

Responsibility

Deans, Heads of Academic Departments or equivalent and Head of Professional Services are responsible for ensuring that equipment owned by their departments is tested in accordance with this policy.

Equipment which is part of the general fixtures and fittings within building is the responsibility of the Estates Department.

Equipment that should be inspected and tested

Equipment owned by the University of Portsmouth

This policy covers both new and existing single phase equipment up to 230 volts that is intended to be connected to a fixed installation or a generator by means of a flexible cable and plug.

Testing of:

- a) three phase equipment
- b) equipment operating at voltages greater than 230 volts
- c) equipment operating at currents in excess of 13 amps
- d) equipment which is connected to a power supply through a spur or breaker box
- e) fixed equipment/appliances that are fastened to a support or otherwise secured in a specific location
- f) built-in appliances/equipment

should be carried out by a qualified electrician and organised through Estates.

Personal Equipment brought into the University of Portsmouth

Staff and students should be discouraged from bringing personal items of electrical equipment to work (eg radios, kettles and fridges). However, there may be circumstances when this is approved by the Head of Department, in which case this equipment must be inspected and tested before use and then at intervals as specified in this Policy.

Equipment which fails the test must be removed from the University premises

Where personal equipment is brought into the University by Staff or Students for use in an Art Installations or projects then it must be tested as per this policy.

Equipment excluded from this Policy

This policy applies to items of work equipment and not personal property of students living in University Halls of Residence. Campus Services are responsible for the policy relating to the personal property of students.

Where electrical equipment is brought into the University by students for their personal use (eg laptops and mobile phone chargers) then these do not need to be tested by the

University. It is, however, important that these personal items of electrical equipment are in good condition and electrically safe. Students therefore need to be made aware of this as part of their course and residential induction.

Where electrical equipment is brought into the University by contractors, their company is responsible for the testing and maintenance, eg Contract Cleaners.

Equipment Hire Companies are legally required to ensure that equipment supplied by them is safe for use at work and is regularly inspected and tested before and after use. Therefore equipment that is leased by the University should not normally need to be tested by the University.

Equipment that needs Testing

The University of Portsmouth has adopted the definitions used in The Institute of Electrical Engineers (IEE) Code of Practice for In-service Inspection and Testing of Electrical Equipment (4th Edition) guidance.

- a) **Portable appliance** - These are appliances which are capable of being easily moved whilst in an energised state and/or operation or an appliance which can easily be moved from one place to another, e.g. vacuum cleaner, toaster, kettles, angle poise lamps,
- b) **Hand held equipment or appliances** - These items are of a portable nature which require control / use by direct hand contact. Examples include: drills, soldering irons, saws, hand held food mixers and glue guns
- c) **Moveable equipment (transportable)** - These items are either: 18 kg or less in mass and not fixed or may have wheels to facilitate movement, eg electric fire, small air conditioning unit, shredder
- d) **Stationary equipment or appliances** - These items are appliances with a mass exceeding 18kg and are not intended to be moved, eg refrigerator, incubator, large vacuum pumps, pillar drills
- e) **Information technology equipment** - These items include electrical business equipment, eg computers, scanners, photocopiers
- f) **Extension leads (portable)** - These items must be tested as a Class I appliance and also require a polarity test. In terms of use, these items must be used in accordance with the manufacturer's guidance and must not be 'daisy chained'.

NB – New equipment must be tested and recorded before it is put into use, with the exception of computers under the managed services scheme, which are replaced every 4 years.

Classes of Equipment Construction

Items at the University of Portsmouth to be tested are usually constructed in one of three basic classes, summarised as follows:

Class I Equipment or Appliances have live parts protected by basic insulation and a metal enclosure or accessible metal parts that could become live in the event of failure of the basic insulation. Typical Class I items include toasters, kettles, washing machines, lathes and pillar drills.

Class II Equipment and Appliances are commonly known as double-insulated equipment. These items have live parts encapsulated in basic and supplementary insulation (double), or one layer of reinforced insulation equivalent to double insulation. Examples of Class II equipment would include food mixers, drills, table lamps.

Class III Equipment and appliances that are supplied from a Separated Extra Low Voltage (SELV) source, which will not exceed 50V and are usually required to be less than 24 or 12 V. Typical items would include telephone answer machines, and other items of IT equipment.

Frequency of Testing

Equipment Type	Class	User check	Formal visual inspection	Combined formal visual inspection and testing
Battery-operated (less than 40 volts)		No	No	No
Extra-low voltage (less than 50 volts AC)		No	No	No
Information technology - earthed	I	No	2-4 years	4 years
Information technology - doubled insulated	II	No	2-4 years	4 years
Office equipment - earthed not hand-held during use and rarely moved eg. large printers, fax machines, shredders	I	No	2-4 years	No if double insulated otherwise up to 5 years
Office equipment - Not hand-held during use and rarely moved eg scanners, desk lamps, fans	II	Yes	2-4 years	3 years
Hand-held equipment - earthed eg drills and vacuum cleaners	I	Yes	6 months	1 year
Hand-held equipment - double insulated eg drills and soldering irons	II	Yes	6 months	1 year
Portable equipment - earthed eg melting point apparatus, toasters, coffee percolators, kettles and microwave ovens ¹	I	Yes	6 months	1 year
Portable equipment - double insulated eg student microscopes, trans-illuminators	II	Yes	6 months	1 year
Moveable equipment - earthed only moved occasionally eg bench top centrifuges and autoclaves, bench mounted pillar drills, ovens, and sewing machines	I	Yes	6 months	1 year
Moveable equipment - double insulated only moved occasionally eg analytical balances, large microscopes	II	Yes	1 year	3 years
Stationary equipment - earthed e.g. glassware washing machines, carbon dioxide incubators, cookers	I	Yes	1 year	2 years
Stationary equipment - double insulated	II	Yes	2 years	4 years
Extension cables (lead) used at mains voltage and battery charging equipment	I	Yes	6 months	1 year
Cables, IEC leads and plugs connected to Class I equipment	I	Yes	6 months	1 year
Loan Equipment - Lighting	I	Yes	6 months	1 year
Loan Equipment - Cameras	II	Yes	1 year	2 years

For recommended frequencies of specific equipment please refer to [Frequency of Testing \(Misc Equipment\)](#)

¹Please ensure all microwave ovens undergo a microwave leakage test during their combined formal inspection and testing stage. If the equipment fails this test, the equipment must be taken out of use.

The frequency of testing is based on the following Health & Safety Executive guidance:

- a) HSE Guidance Note Ind 236 "Maintaining portable electrical equipment in low risk environments" <http://www.hse.gov.uk/pubns/indg236.pdf> -
- b) HSE Guidance Note Ind 107 "Maintaining portable and transportable electrical equipment " <http://www.hse.gov.uk/pubns/priced/hsg107.pdf>

The Frequency of Testing Table should be used as guidance for normal situations; however, there may be instances where more frequent testing is required. The frequency of testing must be considered when preparing a risk assessment for an activity. Factors which could indicate that additional testing is required are:

- a) **Environment** in which the equipment is being used, eg
 - i. environmental chambers and cold rooms where there are extremes of humidity and temperature
 - ii. in or near water, such as pressure washing and underwater filming
 - iii. where the equipment is used off site, such as field courses
- b) **Damage or Interference** – if the equipment is in a situation where it could be damaged or interfered with, eg
 - i. public areas
 - ii. laboratories
 - iii. multi user hand held power tools
 - iv. heavily used items
 - v. vehicle damage

Electrical equipment that is loaned to students should be subject to risk assessment to determine the frequency of testing required.

Inspection and testing should be carried out on this equipment:

- a) when there is reason to suspect the equipment is faulty or damaged but this cannot be confirmed by visual inspection
- b) after any repair, modification or similar work to equipment

Arrangements for securing Health and Safety

Inspection and Testing

There are four options for who should carry out portable appliance testing at the University of Portsmouth:

- a) In house using competent members of staff
- b) Outsource using University approved Contractor and managed by the department
- c) Outsource using University approved Contractor and managed by Estates
- d) A combination of the above

Information and Training

The IEE Code of Practice 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. In order to achieve this level of competency the University of Portsmouth requires that Portable Appliance Testers hold the City and Guilds Code of Practice for In-Service Inspection and Testing of Electrical Equipment qualification 2377 and have suitable and sufficient practical training and experience. A record of competent persons and their training is held on the University's HR System and maintained by the Health & Safety Office. Refresher training should be undertaken every five years.

Portable Appliance Testers who have undertaken the City and Guilds 2377 qualification are qualified to change fuses and plug tops, as long as they feel competent to do so.

Record Keeping

The Health and Safety Office of the University of Portsmouth administers a computer based record keeping system of Portable Appliance Testing results. These are submitted by in house Portable Appliance Testers and contractors in a compatible format. Labels that are applied to tested items of equipment should be named in accordance with the PATGuard Barcoding system; this ensures a structured system throughout the University.

The Departments are responsible for the calibration and maintenance of test equipment in accordance with the manufacturer's instructions or annually, whichever is more frequent. Calibration certificates and results should be retained by the Departments.

Further Information

IET Code of Practice for In-service Inspection and Testing of Electrical Equipment (4th Edition)