

Portable Appliance Testing

1. PURPOSE

- 1.1 The purpose of this procedure is to provide a standardised system for the inspection and testing of portable electrical appliances throughout the University, to give guidance to departments and consequently to ensure the University is meeting its legal obligations.

2. SCOPE

- 2.1 This procedure applies from 1st March 2015 and controls the use of portable electrical appliances:
- on all of our campuses
 - provided by the university to be used off-campus.
 - bought with research funding.
 - brought on to one of our campuses by staff, students, contractors etc.
 - leased electrical portable and transportable equipment.

Please contact Health and Safety Services if you have queries regarding any aspect of this procedure.

3. DEFINITIONS

Portable Appliance	Electrical equipment that is intended to be connected to a generator or a fixed installation by means of a flexible cable and either a plug and socket or a spur box, or similar means
Competent Person	Is a person who is employed or contracted by the University who has received suitable and sufficient training in Portable Electrical Appliance Inspection and Testing, e.g. City and Guilds 2377-32 for Line Managers and 2377-22 for tester.

4. RESPONSIBILITIES

Vice- Chancellor

- 4.1 On behalf of the Council the Vice-Chancellor has executive responsibility to ensure, that the requirements of the health and safety legislation and the University health and safety policy are complied with. The Vice-Chancellor will ensure that responsibility for health and safety is properly assigned and accepted at all levels within the University.

Heads of Functional Areas

- 4.2 Heads of Functional Areas are responsible for ensuring that :-
- A schedule for testing the portable electrical equipment is prepared that takes account of how often the equipment is used, who uses it, the environment it is used in, what it is used for etc.
 - The equipment is tested according to the schedule.
 - Funds and/or staff time is made available to test and inspect all the equipment
 - Arrangements are made to ensure that failed, damaged or otherwise unsafe equipment is made unavailable and controlled until such times as it can be repaired or disposed of in an appropriate manner.
 - Appropriate staff (e.g. line manager/ health and safety co-ordinator) are designated to ensure the schedule is followed and all equipment is made available, tested and where necessary taken out of use, quarantined or repaired.
 - Normally, a register of equipment that requires maintenance and/or testing is created and maintained

Designated Staff

- 4.3 Staff nominated by the Head of Functional area are responsible:
- Ensuring items are made available for testing in accordance with the schedule and appropriate records maintained
 - Ensuring that failed, damaged or otherwise unsafe equipment is taken out of use and controlled until such times as it can be repaired or disposed of in an appropriate manner
 - Advising students and staff regarding personal items
 - Creating and maintaining an equipment register as required
- 4.4 Where relevant, staff responsible must visually check equipment, cable, plug or socket before issuing equipment to a student or another member of staff.

All Staff

- 4.5 Staff are advised not to bring any personal electrical appliances such as radios, heaters, fans etc. into the University without the permission of their manager. If they do, they are responsible for the safety of that appliance and ensuring it is included in the departmental list of portable appliances and tested in accordance with this procedure. If such an appliance fails it must be immediately removed from the premises and repaired or disposed of at the owner's expense
- 4.6 Staff and students should visually check each piece of equipment, including, where appropriate, the cable, plug or socket before and during use.

5. INSPECTION AND TESTING

- 5.1 There are three main types of checks required to ensure effective maintenance of portable electrical equipment. These are User Checks, Formal Visual Inspection and Combined Inspection and Testing (PAT).

User Checks

- 5.2 The person issuing or using the equipment should examine it before use and check for signs that it may not be in sound condition, for example: damage (e.g. cracked plug, frayed/cut cable), signs of overheating, loose parts, etc.
- 5.3 These checks also apply to extension leads, plugs and sockets. A user check should be made when the equipment is issued, taken into use and during use. Any faults should be reported to the relevant person for their area, e.g. the line manager or Health and Safety Co-ordinator, and the equipment immediately taken out of use and controlled until such times as it can be repaired or disposed of in an appropriate manner
- 5.4 In addition to this, it is the responsibility of all users to visually check the electrical appliances they use for any signs of damage or wear. If there is any damage e.g. cracked plug, frayed/cut cable, etc. the appliance must be taken out of use and either repaired or disposed of.

Formal Visual Inspection

- 5.5 These inspections can help to control the risks and to monitor the user checks. A competent person should carry out regular inspections that include checks similar to the User Checks but undertaken in a more formal and systematic manner.
- 5.6 As part of the visual inspection, you should also consider whether:
- The electrical equipment is being used in accordance with the manufacturer's instructions;
 - The equipment is suitable for the job;
 - There has been any change of circumstances;
 - The user has reported any issues.

Combined Inspection and Testing (PAT)

- The checks and inspections above should reveal most potentially dangerous faults. However, some faults can only be reliably detected by a combined visual inspection and test. This should be carried out in accordance with the schedule to back up the checks and inspections and is likely to be justified:
- whenever there is reason to suppose the equipment may be defective and this cannot be confirmed by visual examination;
- after any repair, modification or similar work; or
- at periods appropriate to the equipment, the manner and frequency of use and the environment (see below)

In higher risk working environments e.g. labs and workshops

5.7 When equipment is

- Routinely plugged and unplugged during use, (e.g. floor cleaning equipment, electric drills, extension leads etc.), or
- Is regularly used in wet or dusty conditions, or
- In an environment where mechanical damage is more likely (such as hand held power tools in workshops), or
- Used by students, or
- Used by staff who are unfamiliar with the equipment
- Used for heating, e.g. toasters, heaters, water baths, etc.

Then a local risk assessment should be carried out which will specify the frequency of the inspection and test programme required - for example every 6 months. In some circumstances equipment may also have to be inspected and tested more frequently due to faults occurring or repairs being necessary.

5.8 In higher risk working environments the assessment may also indicate a range of additional measures to reduce electrical and fire risks such as

- Using cordless hand held power tools instead of tools with a fixed lead e.g. jig saws
- Residual Current Devices (RCD's) can help protect from electric shock in potentially dangerous areas such use of pressure washers
- Using reduced voltage equipment and tools, i.e. 110 volt equipment
- Correct selection of equipment for use outdoors

- 5.9 The table in Appendix 1 may be used to help decide the appropriate inspection and test programme

In lower risk working environments e.g. offices

- 5.10 The table in Appendix 1 should be used to devise a schedule for portable electrical equipment in lower risk working environments.
- 5.11 Managers can seek advice from Health and Safety Services regarding all aspects of portable appliance testing.

6. RECORDING OF INSPECTION AND TEST RESULTS

- 6.1 Each Faculty / Department will be responsible for making its own inspection and testing arrangements. Some departments will have the technical resources to carry out these arrangements. Other departments should use the contractor as currently advised by Procurement Office. Each area should however establish and maintain a register of all of their portable appliances.
- 6.2 In areas with significant amounts of electrical equipment a maintenance log, including faults found during inspection, may be appropriate and can inform testing schedules. In all cases the inspection and test results must be kept in an easily accessible format and recorded to allow for future comparison, for written identification of defects to be remedied and to provide information for an assessment of risk.
- 6.3 Functional areas should keep the results centrally, as the enforcing authorities (e.g. the HSENI) or the University insurers may wish to inspect them. PAT test schedules and records are part of the documentation required during the University Internal Health and Safety Audit process.
- 6.4 Equipment subject to a combined inspection and test (PAT) should be labelled to indicate that it has been tested satisfactorily, i.e. has been passed as safe, and when it was tested. Such labels should not have a next test due date on it.

7. REMEDIAL ACTION

- 7.1 If inspection and testing show the appliance is faulty, it is **UNSAFE**. Unless remedial action is immediate and the equipment then passes the re-inspection and test, the equipment **MUST BE IMMEDIATELY TAKEN OUT OF SERVICE** e.g. by removing the plug and a “failed” label attached to the appliance. Hand held and portable items should be immediately removed from the area and placed in quarantine. Larger items should be isolated from the electrical supply and labelled appropriately.
- 7.2 If the item is to be disposed of then the requirements under the Waste Electrical and Electronic Equipment (WEEE) Regulations must be complied with.

REFERENCE DOCUMENTS

1. [Maintaining portable electrical equipment](#). HSG107. HSE Books
2. The Health and Safety at Work (Northern Ireland) Order
3. Electricity at Work Regulations (Northern Ireland)
4. Provision and Use of Work Equipment Regulations (Northern Ireland)
5. Management of Health and Safety at Work Regulations (Northern Ireland)
6. The Waste Electrical and Electronic Equipment (WEEE) Regulations

APPENDIX 1

Equipment / Environment		User Check	Formal Visual Inspection	Combined Inspection and Testing
Equipment hire / loan		N/A	Before issue /after return	Before issue
Battery operated equipment (less than 40 V)		No	No	No
Extra low voltage (less than 50 V ac), telephone equipment, low-voltage desk lights		No	No	No
Construction / Maintenance Activity	110V equipment	Yes, weekly	Yes, monthly	Yes, before first use on site then 3-monthly
	230V equipment	Yes, daily/every shift	Yes, weekly	Yes, before first use on site then monthly
	Fixed RCDs	Yes, daily/every shift	Yes, weekly	Yes, before first use on site then 3-monthly (portable RCDs – monthly)
	Equipment site offices	Yes, monthly	Yes, 6-monthly	Yes, before first use on site then yearly
Heavy industrial/high risk of equipment damage (not construction)		Yes, daily	Yes, weekly	Yes, 6 – 12 months
Light industrial		Yes	Yes, before initial use then 6-monthly	Yes, 6 – 12 months
Desk Computers		No	Yes 2-4 Years	No, if double insulated, otherwise up to 5 years
Photo-copiers, fax machines and rarely moved printers and scanners		No	Yes 2-4 Years	No, if double insulated, otherwise up to 5 years
Double insulated (Class II) equipment: Not hand held; moved occasionally e.g. fans and table lamps, microwaves		No	Yes 2-4 Years	No
Double insulated (Class II) equipment: Hand held e.g. some kitchen equipment		Yes	Yes 6 months – 1 Year	No
Earthed equipment (Class I) Electric kettles, some kitchen equipment		Yes	Yes 6 months – 1 Year	Yes 1 -2 Years
Cables, (leads and plugs connected to the above) and mains voltage extension leads and battery charging equipment for laptops, iPads, mobile phones		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.

