

PORTABLE APPLIANCE TESTING PROCEDURE

Policy Name – Portable Appliance Testing Procedure	
Version number: 1	
Policy Owner	Policy Author/Reviewer
Jimmy Fenton Health, Safety and Wellbeing	Jimmy Fenton
Approving body	Date of approval
Vice Chancellor/SLT	May 2025
	Equality Screened
	In progress
	Next Review date
	May 2027
Queries relating to this document should be directed to the Policy Owner – Jimmy Fenton, w.fenton@ulster.ac.uk OR healthandsafety@ulster.ac.uk	
This document can be made available on request, in alternative formats and in minority languages to meet the needs of those who are not fluent in English.	



HEALTH AND SAFETY Portable Appliance Testing (PAT) Procedure

(Maintaining Portable Electrical
Equipment)

Originally Issued	February 2015 (UUHSW10)	Contact	HSW
Latest Issue	May 2025	Status	Current
Approved by	Vice Chancellor/SLT	Next review date	May 2027

The current version is available on the Health, Safety and Wellbeing website at:
[Health, Safety and Wellbeing Policies and Procedures - Ulster University](#)

Contents

1.0	Purpose	Page 2
2.0	Scope and Commencement	2
3.0	Background	2
4.0	Definitions	3
5.0	Key Legal Requirements	3
6.0	Responsibilities	4
7.0	Inspection and Testing	5-6
8.0	Recording of Inspection and Test Results	7
9.0	Remedial Action	7
	Reference Documents	8
	Appendix 1	9-10
	Appendix 2	11-12

1 PURPOSE

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 AND COMMENCEMENT

This procedure applies from May 2025 and controls the use and In-Service Inspection and Testing of Electrical Equipment (Portable Appliance Testing):

- on all of University campuses;
- provided by the University to be used off-campus;
- bought with research funding;
- brought on to a campus by staff, students, contractors, etc;
- leased electrical portable and transportable equipment.

Please contact HealthandSafety@ulster.ac.uk if you have queries regarding any aspect of this procedure.

3 BACKGROUND

This procedure is for those who have control over or use portable electrical equipment: staff such as managers, electricians, technicians and users. It advises on maintaining portable electrical equipment to prevent danger and comply with legislation.

The scope of this procedure is limited to Class I, Class II, and Class II FE equipment (see **Appendix 1**).

Electrical equipment can cause an electric shock or burn, or fire due to faults, damage, wear, or misuse. This procedure covers electrical portable equipment used in all environments, e.g., electric drills, extension leads, office equipment, portable grinders, pressure water cleaners, floor cleaners, electric kettles and similar equipment used in all environments. Major items of plant, such as vehicles, cranes, and generators, are beyond the scope of this procedure, as are electromedical equipment, electrostatic spraying equipment, and equipment used below ground in mines, for which there are special requirements.

Business equipment (such as computers, laptops, printers, photocopiers etc) does not present the same level of risk as other equipment (such as electric drills) providing the leads and plugs are protected from mechanical damage or stress. Movement, and therefore damage through being moved, is less likely to occur, and the equipment is often double insulated and used in a dry, clean environment with non-conducting floors.

4 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. This includes extension leads, plugs and sockets, and cable sets that supply portable equipment such as laptops and phone chargers.
Competent Person	Is a person who is employed or contracted by the University who has received suitable and sufficient training in Electrical Equipment Maintenance and Testing (PAT), for example City & Guilds 2377-77
Relevant Person(s)	Includes: Directors of Faculty Operations, Managers, Academic Supervisors, Heads of School, Technical Staff

5 KEY LEGAL REQUIREMENTS

The Electricity at Work Regulations (Northern Ireland) 1991 state:

The legal requirements relating specifically to the use and maintenance of electrical equipment are contained in the Electricity at Work Regulations (Northern Ireland) 1991. These Regulations apply to all work activities involving electrical equipment. They place duties on employers, the self-employed and employees (subsequently referred to as 'duty holders'). These duties are intended to control risks arising from the use of electricity.

The Regulations require that electrical systems and equipment must be maintained, so far as reasonably practicable, to prevent danger. This requirement covers all items of electrical equipment including fixed or portable equipment.

The Regulations do not specify what needs to be done, by whom or how frequently (for example, they do not make it a legal requirement to test all portable electrical appliances every year). This allows the duty holder to select precautions appropriate to the risk rather than having precautions imposed that may not be relevant to a particular work activity. Note that even if a contractor is used to carry out maintenance procedures, including portable appliance testing, the duty holder still has overall responsibility for complying with the law.

There are also legal duties on manufacturers and suppliers covering the initial integrity (safety) of new work equipment. There are general duties covering the use and maintenance of work equipment, designed to ensure that it remains in a safe condition.

6 RESPONSIBILITIES

Please refer to the main Health, Safety and Wellbeing policy on the University's website for further details on roles and levels of responsibility using the link:

https://www.ulster.ac.uk/data/assets/pdf_file/0007/125647/Health-Safety-and-Wellbeing-Policy.pdf

6.1 Relevant Persons (see Definitions - Section 4) must ensure:

- Staff are aware of this procedure and of their responsibilities.
- A register of electrical equipment that require maintenance and/or testing is created or in place and maintained.
- They advise students and staff regarding personal items.
- A schedule for testing 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 equipment.
- Appropriate staff (e.g. line manager / health and safety co-ordinator) are designated to ensure arrangements are made and the schedule is followed, with all equipment made available, tested, and where failed, damaged or otherwise unsafe, is quarantined and controlled until it is repaired or safely disposed of (Ref Section 9.2).

6.2 Staff and Students

Staff are advised not to bring any personal electrical appliances such as kettles, radios, heaters, fans etc. into the University without the permission of their manager. If they do so, they are responsible for the safety of that appliance and ensuring it is included in the departmental register 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.

Staff and students should visually check each piece of equipment, including, where applicable, the cable, plug or socket, before and during use.

6.3 The Health, Safety and Wellbeing (HSW) Team will:

- Ensure during inspections / audits that this procedure is being adhered to;
- Provide support and assistance to relevant staff.

7 INSPECTION AND TESTING

- 7.1 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. Faculties, Schools, Departments and Directorates are responsible for inspections and testing of equipment in their areas.

User Checks (Reference also Appendix 2)

- 7.2 Staff issuing equipment to students or other members of staff, or using the equipment, must visually examine it beforehand, checking 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.
- 7.3 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 faulty equipment should immediately be taken out of use and reported immediately to the relevant person for their area, e.g., the line manager or Health and Safety Co-ordinator, and controlled / quarantined until such times as it can be repaired or disposed of in an appropriate manner.

Formal Visual Inspection

- 7.4 These inspections help to control the risks and to monitor the user checks. A competent person e.g., a trained technician should carry out regular inspections that include checks similar to the User Checks but undertaken in a more formal and systematic manner using the departmental register.
- 7.5 As part of the visual inspection, you should also consider whether:
- The electrical equipment is being used as intended;
 - The equipment is suitable for the job;
 - There has been any change of circumstances;
 - A user has reported any issues.

Combined Inspection and Testing

- 7.6 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 by a competent person in accordance with the schedule:
- 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;

- at periods appropriate to the equipment, the manner and frequency of use, the environment, and as dictated by the 'schedule' (see **Appendix 1**)

In higher-risk working environments e.g. laboratories and workshops

7.7 When equipment is:

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

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.

7.8 The risk assessment may also indicate a range of additional measures to reduce electrical and fire risks such as:

- Using cordless handheld power tools instead of tools with a fixed lead e.g. drills, jigsaws, impact-drivers, sanders, grinders;
- Residual Current Devices (RCD's) which can help protect from electric shock;
- Using reduced voltage equipment and tools i.e. 110-volt equipment;
- Correct selection of equipment for use outdoors; and/or where water is an inherent risk.

7.9 **Appendix 1** should be used to help decide the appropriate inspection and test programme.

In lower-risk working environments e.g. offices

7.10 **Appendix 1** should also be used to devise a schedule for portable electrical equipment.

7.11 Managers and staff can seek advice from HealthandSafety@ulster.ac.uk regarding all aspects of portable appliance testing.

8. RECORDING OF INSPECTION AND TEST RESULTS

- 8.1 Each Faculty / School / Department / Directorate 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 the Procurement team: <https://www.ulster.ac.uk/finance/staff/staff-login/procurement/buying/contracts/estates/portable-appliance-testing-pat>. You may need to “Request Access” when prompted in order to access the above link.
- 8.2 A Faculty / School / Department / Directorate must however establish and maintain a register of all of their electrical equipment.
- 8.3 In areas with significant amounts of electrical equipment, in addition to the register, a maintenance log, including faults found during inspection, may also 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 risk assessment.
- 8.4 Faculties / Schools / Departments / Directorates should keep the results centrally, as the enforcing authorities (e.g., the HSENI) or the University insurers may wish to inspect them. Registers, schedules and records are part of the documentation required during the University Internal Health and Safety Audit process.
- 8.5 Equipment subject to a combined inspection and test 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. Such labels should not be removed under any circumstances.

9. REMEDIAL ACTION

- 9.1 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. Handheld 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.
- 9.2 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. Health and Safety at Work (Northern Ireland) Order 1978
3. Electricity at Work Regulations (Northern Ireland) 1991
4. Provision and Use of Work Equipment Regulations (Northern Ireland) 1999
5. Management of Health and Safety at Work Regulations (Northern Ireland) 2000
6. Waste Electrical and Electronic Equipment (WEEE) Regulations
7. UU Contractor Procedure
8. The IET CoP 5th Edition, In-Service Inspection and Testing of Electrical Equipment

APPENDIX 1

Health and Safety Executive Guidance Chart

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 handheld; moved occasionally e.g., fans and table lamps, microwaves		No	Yes 2-4 years	No
Double insulated (Class II)  equipment: Handheld e.g., some kitchen equipment		Yes	Yes 6 months - 1 year	No
Earthed equipment (Class I) Electric kettles, some kitchen equipment e.g. fridge and toaster		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.

Earthed equipment (Class I)

This equipment relies on the metallic (exposed conducting) parts of the equipment being effectively earthed. If this earth connection is lost there is a possibility of the exterior of the equipment becoming live, with a potentially fatal result. Anyone touching live metal will be in contact with electricity.

Double-insulated equipment (Class II)

This equipment (which includes double insulated equipment marked) is constructed with high-integrity insulation and does not have nor need an earth connection to maintain safety. If you cannot see this symbol, you should assume that the electrical equipment is a Class I appliance.

IT and related equipment (Class II FE)

New product classification mainly for IT and related business equipment.
As above for Double insulated equipment.

APPENDIX 2

User checks and formal visual inspections

User checks

These should be carried out before relevant electrical equipment is used, with the equipment disconnected. Employees should look for:

- damage to the lead including fraying, cuts or heavy scuffing, e.g., from floor box covers;
- damage to plugs, e.g., to the cover or bent pins;
- tape applied to leads to join them together;
- coloured wires visible where the lead joins the plug (e.g. the cable is not being gripped where it enters the plug);
- damage to the outer cover of the equipment itself, including loose parts or screws;
- signs of overheating, such as burn marks, distortion, melting or staining on the plug, lead, or piece of equipment;
- equipment that has been used or stored in unsuitable conditions, such as wet or dusty environments or where water spills are possible; and
- cables trapped under furniture, or in floor boxes in particular cutting or crushing by the cover.

Formal Visual inspections

To carry out a visual inspection you don't need to be an electrician, but you do need to know what to look for and you must also have sufficient knowledge to avoid danger to yourself and others.

Basic training can equip you (or a member of staff) with appropriate basic electrical knowledge to enable you to carry out a visual inspection competently.

As part of the visual inspection, you should consider whether:

- the electrical equipment is being used in accordance with its intended use;
- the equipment is suitable for the job;
- there has been any change of circumstances;
- a user has reported any issues.

Visual inspection should include the checks carried out by the user and where appropriate, a competent person can include removing the plug cover and checking internally that:

- there are no signs of internal damage, overheating or water damage to the plug;

- the correct fuse is in use; this must be a proper fuse; a grub screw, piece of wire, nail, etc, must never be used;
- the wires including the earth, where fitted, are attached to the correct terminal (see **Figure 1**);
- the terminal screws are tight, but must not be overtightened;
- the cord grip is holding the outer part (sheath) of the cable tightly; and
- no bare wire is visible other than at the terminals; no coloured individual wire insulation is visible outside the plug cover or through the outer protective sleeve.

For equipment/cables fitted with moulded sealed plugs only the fuse can be checked.

