

Portable Appliance Testing (PAT)

Document Name	Portable Appliance Testing Procedure	 <p>BIRMINGHAM CITY University</p>
Document Number	EFE001	
Document Owner	Terry Venables, Chief Engineer	
Document Controller	Racheal Guest, Facilities Development Manager	
Review Frequency	Annually	
Approver	John Plumridge	
Date of Issue	10 June 2021	
Key Distribution	Estates and Facilities Department Engineering Team Health and Safety Team	
Published	Share Point / iCity Estates and Facilities	

Change Control

Version	Date	Checked By	Description
V.0.1	05/03/2021	Chief Engineer	Review V 0.1
V.0.2	10/03/2021	Estates & Facilities Deputy Director	Review V.0.2
V.0.3	25/03/2021	Health and Safety Manager Legal Advisor	Review V.0.3
V.0.4	31/03/2021	Estates & Facilities Deputy Director Chief Engineer Risk and Compliance Manager	Review V.0.4
V.0.4	19/03/2021	Chief Engineer Risk and Compliance Manger	Review V.0.4
V.0.5	30/04/2021	Estates and Facilities Deputy Director	Review V.0.5
V.0.5	13/05/2021	Chief Engineer Risk and Compliance Manager	Review V.0.5
V.0.6	19/05/2021	Estates and Facilities Deputy Director	Review V.0.6
V.0.7	10/06/2021	Estates and Facilities Director	Approved by Estates and Facilities Director

Related Documents

Version	Date	Author	Document Ref.	Document Title

Approvals

Approver	Title	Date	Signature
John Plumridge	Estates and Facilities Director (DoE)	10/06/2021	
Paul Davis	Deputy Estates and Facilities Director (DDoE)	26/05/2021	
Owner	Chief Engineer	26/05/2021	

Contents

1	Introduction	4
2	Definition	4
2.1	Appliances that are included in the testing regime are;.....	4
3	Legislation	4
4	Inspection and Testing	5
4.1	Halls of Residences / University Campus.....	5
4.2	University-owned electrical appliances and equipment	5
4.3	Personal electrical appliances and equipment with plugs.....	5
4.4	International Appliances.....	6
5	Register of Appliance	6
6	Roles and Responsibilities.....	6
6.1	Portable Appliance Testing Co-ordinators	6
6.2	Employees	6
6.3	Students.....	7
7	Frequency of Inspection and Test.....	8
7.1	Prior Notification.....	8
7.2	Exemptions	8
7.3	Failed or Unsafe Items	8
7.4	Test Results	9
7.5	Frequency of Testing	9

1 Introduction

The law states that you must maintain electrical equipment if it can cause danger or injury. This guidance document specifies how portable electrical equipment items should be subject to a Portable Appliance Test (PAT) at the University.

As per current HSE legislation and supporting guidance INDG236 Rev 3 2013 the University will have a regular inspection system in place for portable electrical equipment.

2 Definition

A portable appliance is generally any item that can be moved, either connected or disconnected from an electrical supply. Portable items generally have a lead (cable) and a plug.

Items that are hard wired are considered to be fixed electrical equipment items that fall outside of the scope of this definition.

Class I Equipment

'Equipment with basic insulation as provision for basic protection and protective bonding as provision for fault protection.'

Therefore with Class I appliances, the user is protected by a combination of basic insulation and the provision of an earth connection, thus providing two levels of protection.

Class II Equipment (Double insulated denoted by double box symbol below)

Class 2



symbol

'Equipment with basic insulation as provision for basic protection, and supplementary insulation as provision for fault protection, or in which basic and fault protection are provided by reinforced insulation.'

Therefore in Class II appliances, the user is protected by at least two layers of insulation. For this reason, Class II appliances are also known as Double Insulated. They do not require an earth connection.

2.1 Appliances that are included in the testing regime are;

- Electrical equipment that can be easily moved around, such as kettles, vacuum cleaners, portable heaters, fans, desk lamps, audio visual equipment, PC's, projectors and some laboratory equipment
- Larger items that could be moved around (but only rarely) such as water chillers, fridges and freezers, microwaves, cookers, domestic washing machines, photocopiers, vending machines, desktop computers are all deemed to be portable items
- Extension leads, multi-way adaptors and power connection leads for electrical equipment.

3 Legislation

The Electricity at Work Regulations 1989 requires employers to maintain electrical equipment so as to prevent danger, the legislation does not stipulate how this should be undertaken or how often.

The Health and Safety at Work Act 1974 (HASAWA), the Management of Health and Safety at Work Regulations 1999 and the Provision and Use of Work Equipment regulations of 1998 (PUWER) also require employers to ensure the health and safety of employees and to ensure work equipment is suitable for the purpose for which it is to be used and maintained in a safe condition.

It is the responsibility for each employer to assess the magnitude of risk for appliances used and to determine the frequency and types of maintenance that is undertaken. This document details the rationale for the types and frequency of testing for portable appliances owned and operated by the University.

4 Inspection and Testing

All items within the University estate will be subject to an inspection or a combined inspection and test. The frequency of test for classifications of items are given in Table 1 below. The frequency of test is based on the magnitude of electrical risk and the suggested frequency in the Health and Safety Executives guidance document Maintaining Portable Electric Equipment in Low Risk Environments INDG236 (rev3). Notwithstanding the guidance in INDG236 (rev3) all items within the University estate will be PAT tested annually.

Inspection and testing of portable appliances is undertaken by the Estates & Facilities Department (specified in Section 6) through the relative Preventative Planned Maintenance (PPM) contractor for that site. Testing will be undertaken from early in the morning and will continue throughout the day. Whilst every possible effort will be taken to minimise disruption to day to day operations, it is inevitable that some disruption will be encountered during the testing programme.

4.1 Halls of Residences / University Campus

Electrical appliances which are brought into University Locks Halls of Residence by students must be electrically safe and of sound design. They should carry an ASTA/BEAB kite mark or an equivalent European Safety Conformity Marking. Appliances, cables and plugs that are damaged **MUST NOT BE USED**.

Students must only use bar extension leads and not block ones and must not plug multiple extension leads together and ensure that cables do not trail across the floor and/or furniture.

The University reserves the right to enter any room within University Locks Halls of Residence at any time to investigate or repair an electrical fault and to remove and/or confiscate electrical goods if it is believed to constitute a fire or other health and safety hazard. The University will endeavour to return these items at the end of the Period of Residence.

4.2 University-owned electrical appliances and equipment

These are to be tested regularly in accordance with this procedure and will be labelled as “passed” along with the date of the PAT. These must not be tampered with in any way and must be reported, if damaged or faulty to University Locks reception or security immediately.

4.3 Personal electrical appliances and equipment with plugs

Appliances and equipment brought onto University premises should show no signs of cracks or overheating. Wires inside should be connected correctly and be screwed down tightly and the right size fuse should be in place. The cable between the plugs and appliances should be free of damage and the coloured wires inside should not be visible.

Students that arrive without the appropriate plugs fitted to appliances, they may be purchased from nearby shops. All plugs must be fitted by a competent person who has experience of PAT.

All portable electrical appliances must be electrically safe. As part of the University policy, PAT will be carried out free of charge annually. This service is provided at University Locks and students will be notified of the date for your appliances to be tested.

Ideally, electrical equipment should be tested before it is brought into the Halls of Residence. This is particularly important if an item is from outside the UK due to voltage differences. Electrical equipment can be dangerous. Unauthorised repairs to communal equipment or modifications to electrical wiring must not

be carried out. Radios, music systems, hairdryers and shavers, computers, televisions and DVD players/recorders are permitted but no other electrical appliances may be used in the Accommodation, Halls of Residence or elsewhere on the University estate. Students are not permitted to bring large electrical appliances, which includes but is not limited to fridges, freezers or washing machines, heating appliances or mini fridges into the Accommodation, Halls of Residence or elsewhere on the University estate.

4.4 International Appliances

The electrical supply voltage or “mains” is supplied in the United Kingdom at 230 Volts.

Connection to the mains is via the traditional BS1363 13 amp 3 pin plug.

Some countries including America, France and Japan have voltage supplies in the range of 110-120 volts and utilise 2 pin plugs. Electrical appliances and equipment intended to be brought from these regions cannot be used in the UK. However, many EEC countries do have voltage supplies similar to the UK. Please check the suitability of ALL your personal appliances prior to use at the Accommodation, Halls of Residence or elsewhere on the University estate.

5 Register of Appliance

There are tens of thousands of appliances owned by the University spread over numerous sites, which are used in a variety of environments ranging from halls of residences to offices and classrooms. The items are predominantly Class II electrical equipment (see definition in section 2) and are used in low risk environments.

6 Roles and Responsibilities

The Estates & Facilities Engineering Department is responsible for the management of the University’s contractor/s for the annual inspection and testing of portable appliances. They are supported in this process by the Health and Safety Team who provide advice and guidance on the testing programme.

6.1 Portable Appliance Testing Co-ordinators

Each Faculty and Professional Service Department will appoint a nominated PAT Co-ordinator to facilitate the delivery of the inspection and testing programme in each area.

The PAT Co-ordinator will be responsible for ensuring that the contractor has access to all areas, ensuring that appliances are made available for testing and dealing with any initial queries from the contractor. This will include ensuring that appliances that are not difficult to access, such as installed high level lighting, and that they are gathered together to ensure the safety of the contractors.

The PAT Co-ordinator will also be responsible for informing staff in their area when the inspections and tests will be taken place.

The PAT Co-ordinator will be responsible for ensuring that items that have failed the inspection and test are quarantined until they can be repaired or disposed of.

6.2 Employees

Staff have a responsibility to ensure that any personal portable appliances which are brought onto campus have been PAT within the last twelve months. If the appliance is out of date then it should be requested through the Estates and Facilities Helpdesk for PAT to be carried out prior to use.

Staff should ensure that they cooperate with the inspection and test contractors and to ensure all appliances are made available to test also to provide access to their offices and other areas when requested. This may involve turning off computers and other equipment for the tests to be completed.

Staff should self-check and carry out a visual check of their own equipment that is being used. If staff have any concerns it should be reported through to the Estates and Facilities Helpdesk Team and the appliance should not be used.

Visual checklist of items to look out for are:-

- Damage to the lead including fraying, cuts or heavy scuffing, e.g. from floor box covers
- Damage to the plug e.g. to the cover, or pins bent
- Coloured wires visible where the lead joins the plug or appliance (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 or staining/dischouring on the 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
- Cables trapped under furniture or in floor boxes
- Tape applied to the lead to join leads together or cover repairs
- Concerns that the equipment is not being used in accordance with the manufacturer's instructions
- Concerns that the equipment is not suitable for the job

The appliance has been reported for issues via the Estates and Facilities (Facilities Services) Team and will undertake any ad-hoc PAT of personal items or new equipment that staff may bring onto campus. This will be arranged through staff requesting a call through the Estates & Facilities Helpdesk Team. The Facilities Team will, depending on activity, PAT residual items that have been missed off the annual inspection, thereby ensuring all items have been captured.

6.3 Students

Students should self-check and carry out a visual check of their own equipment that is being used.

Visual checklist of items to look out for are:-

- Damage to the lead including fraying, cuts or heavy scuffing, e.g. from floor box covers
- Damage to the plug e.g. to the cover, or pins bent
- Coloured wires visible where the lead joins the plug or appliance (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 or staining/dischouring on the 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
- Cables trapped under furniture or in floor boxes
- Tape applied to the lead to join leads together or cover repairs
- Concerns that the equipment is not being used in accordance with the manufacturer's instructions
- Concerns that the equipment is not suitable for the job

If students have any concerns it should be reported through to the Estates and Facilities Helpdesk Team and the appliance should not be used.

Facilities Services Team will undertake any ad-hoc PAT of personal items or new equipment that staff may bring onto campus. This will be arranged through staff requesting a call through the Estates & Facilities

Helpdesk Team. The Facilities Team will, depending on activity, PAT residual items that have been missed off the annual inspection, thereby ensuring all items have been captured.

7 Frequency of Inspection and Test

7.1 Prior Notification

A Portable Equipment/Appliance Testing Notification shall be issued by Estates and Facilities Department at least two weeks prior to attendance by the nominated PAT contractor, relevant departments PAT Co-ordinators, the University Health and Safety Department and on-site Facilities Staff will be notified of the proposed dates for PAT.

The PAT will be carried out by the nominated main PPM contractors for the sites under their contract. The testing maybe subcontracted to a testing organisation.

7.2 Exemptions

Some equipment is considered to be a low risk with regard to electrical safety and is not tested as part of the University's inspection and test schedule, other items such as contractors equipment is not owned by the University and is therefore not the University's responsibility.

The following equipment is not required to be inspected or tested by the University's contractor;

Chargers and other equipment that are plugged directly into a socket with no cable or only an extra low voltage (< 50volt AC) cable, e.g. block adaptors, plug-in air fresheners;

Personal equipment belonging to staff or students, as these should be tested before they are brought onto University premises;

Computer servers, which are permanently connected to supply and cannot be switched off. These will be serviced and maintained by the Faculty/Department responsible;

Portable appliances belonging to contractors (e.g. Cleaning, Catering Contractor and Term Maintenance contractors) or other organisations, such as the Students' Union are not included within the programme. However, it is expected that on site contractors will carry out their own annual PAT programme and provide a record to the Estates & Facilities Department.

7.3 Failed or Unsafe Items

Failures will be treated as follows:-

A failure notification sticker will be affixed to appliance and the fuse shall be removed from the plug. The appliance will be removed (if possible) and handed to the PAT Co-ordinator or Facilities Services Team at each site for repair or disposal.

An appliance failure register/schedule will be presented to the PAT Co-ordinator and Facilities Services Team and emailed to the Estates and Facilities Helpdesk on the day of the test. This items is referring to the daily list of failed items that would be collated as part of the PAT Testing procure. This allows for quick remediation of any failed items, rather than waiting until the end of the process to report all failed items in one bulk report.

The Faculty/Department will arrange to have the failed equipment repaired or replaced and arrange to have repaired items re-tested by either a PAT qualified person in their department or submit a request into Estates and Facilities Helpdesk before putting them back into service.

7.4 Test Results

Records of the results of combined inspection and tests will be maintained by the Estates & Facilities Department, including items that have failed.

7.5 Frequency of Testing

The below table is based on Table 1 'Suggested initial intervals for checking portable electrical equipment' HSE INDG236 (rev3). Notwithstanding the guidance in HSE INDG236, all portable equipment across the University estate, shall be PAT on an annual basis.

Equipment / Environment	User Checks Applicable	Formal Visual Inspection	Combined Inspection & Testing
Battery operated: (less than 40 volts)	Yes	No	No
Extra low voltage: (less than 50 volts AC): telephone equipment, low voltage desk lights	Yes	No	No
Desk top computers & VDU screens	Yes	Yes (Annual)	No if double insulated, otherwise annual
Photocopiers, printers, fax machines, A/V equipment and projectors: Not hand-held and/or rarely moved	Yes	Yes (Annual)	No if double insulated, otherwise annual
Double insulated (Class II) equipment: Not hand-held. Moved occasionally, e.g. fans, table lamps	Yes	Yes (Annual)	No
Double insulated (Class II) equipment: hand-held, e.g. some floor cleaners, some kitchen equipment	Yes	Yes (Annual)	No
Earthed equipment: (Class I): electric kettles, some floor cleaners, some kitchen equipment, portable heaters and irons	Yes	Yes (Annual)	Yes (Annual)
Cables (leads and plugs connected to the above), mains voltage extension leads and battery-charging equipment including laptop power leads/chargers	Yes	Yes (Annual)	Yes (Annual)
Theatrical/Stage Lighting	Yes	Yes (Annual)	Yes (Annual)
Domestic appliances and moveable kitchen equipment in student halls of residences	Yes	Yes (Annual)	Yes (Annual)
Student/Staff owned equipment or appliances	Yes	N/A	N/A

Estates & Facilities

Contractor owned equipment or appliances including on construction sites	Yes	N/A	N/A
Specialist Laboratory or Engineering workshop equipment including handheld tools	Yes	Yes (Annual)	Yes (Annual)
New electrical items/appliances (straight out of the box)	Yes	Not in first year, then annually	Not in first year, then annual