PORTABLE APPLIANCE TESTING (PAT) PROCEDURE

1  INTRODUCTION

The University of the West of Scotland has a legal obligation to carry out, on a regular basis, electrical testing to all electrical equipment and installations. Such testing is a requirement of the Electricity at Work Regulations of 1989.

It is the responsibility of staff within Schools and Departments to ensure the testing of all Portable Appliances within their area. The definition of Portable Appliances includes all electrical or electronic items that are connected to a single phase 240 volt main supply via a user removable plug, typically a 13 amp square pin.

2  RESPONSIBILITY

1. It is the responsibility of Estates Solutions to maintain an inventory of all portable appliances, based on information from Schools and Departments and it is the responsibility of each School and Department to ensure that Estates Solutions are informed of any changes to this inventory through the Estates Solutions Helpdesk.

2. All electrical items covered by Portable Appliance Testing must be tested on a regular basis by a certified competent person.

3. Each tested item must be labelled with the date of the latest test and the initials of the tester. The results of the tests will be stored within an Estates Solutions database.

4. Any item failing its required test must be withdrawn from service immediately and not re-used until the fault(s) have been rectified and it has been re-tested and successfully passed the PAT.

5. All new and second hand electrical items (including those brought from home, etc) must be registered and tested before use and regularly thereafter.

6. Those carrying out inspection and tests must be competent to undertake the inspection, and where appropriate, testing of electrical equipment and appliances, having due regard to their own safety and that of others. The Tester must be able to recognise electrical, mechanical or thermal damage to electrical equipment and appliances and their flexes/cables which may be encountered in any environment.

7. All staff must inform Estates Solutions of all and any electrical equipment brought to site.
3 PROCEDURE

What is Included? Portable Appliance Testing (PAT) applies to all electrical or electronic items that are connected to a single phase 240 volt main supply via a user removable plug, typically 13 amp square pin. The portable applies to the connection to the electrical supply not whether the item is itself portable.

a) Notes:

1. All electrical items within a Department regardless of ownership are included in these Regulations. Therefore this includes personally owned items and items loaned from other departments and/or external agencies.

2. Portable mains extension leads are separate electrical items and must be tested independently of the item to which they are connected.

   **All electrical extension leads must be of the correct length for the use required and must be fully uncoiled prior to use. Cube multiway adaptors are not permitted.**

3. Electrical items owned by Students and used in University owned residential accommodation are subject to this policy. Ref. Appendix 2 (below)

4. The only electrical items excluded are those which operate solely on batteries (for example, calculators and radios), or low voltage (for example some computer peripherals, laptops, telephones and modular electronic units). However if a low voltage item has a 240 volt external power supply then its power supply is covered by these regulations.

b) Legislation

All work with or involving the use of equipment powered by electricity at the University of the West of Scotland is subject to the following UK legislation.

2. The Electricity at Work Regulations (1989)

c) Staff / Training

The Health and Safety Executive recognise that at its simplest, inspection and testing using a basic pass/fail type of portable appliance tester (PAT) may be undertaken by non-electrically qualified persons following appropriate training.

All University of the West of Scotland staff required to undertake appliance inspection and testing must be suitably trained.

d) Test Records

Records must be maintained of all appliance inspections and safety tests, and any corrective maintenance. It may be convenient to incorporate these results into an existing inventory record system. It is a requirement of the “Electricity at Work Regulations 1989” that these records are retained for the life of the equipment.

e) Test Identification Labels

Each portable electrical appliance should have an INSPECTION (Black), PASS (Green) or FAIL (Red) label fixed to it after each inspection or test.
4. PORTABLE APPLIANCE TESTING PROCEDURE

a) Responsibility for Inspection and Testing

Responsibility for the introduction and management of the procedure will lie with Deans of Schools or Heads of Department.

Estates Solutions shall apply the policy on behalf of the Head of School/Division/Unit.

b) Frequency of Testing

There are no absolute rules regarding how often an item of portable electrical equipment should be inspected or tested. HSE Guidance Notes advise “regular” inspection and testing, this is often seen as a requirement for annual testing. However, circumstances, conditions of use and environmental conditions will vary. The frequency of testing should be determined by risk assessment. The HSE recognises that the majority of electrical equipment used in offices and other low risk environments are not hand held and as such present a low risk of electric shock, therefore, inspection and testing frequencies may reflect this.

c) Frequency of Inspection will generally be more frequent than for testing. The HSE has issued the following guidance documents:

   i) The Electricity at Work Regulations 1989
     Maintenance of Portable Electrical Appliances – Inspection and Testing

   ii) The Maintenance of Portable Electrical Equipment in Offices, and other Low Risk Sector Premises

The tables below have been prepared in line with guidance offered by the HSE, and will satisfy many situations of average use. These frequencies can be used until sufficient experience is built up to establish what is appropriate for particular circumstances.

5. GUIDANCE FOR OFFICES AND OTHER LOW RISK ENVIRONMENTS (see Appendix 1)

6. TESTING ELECTRONIC EQUIPMENT (see Appendix 2)

7. USER CHECKS

Inspect the appliance prior to use to ensure:-

- The lead insulation is intact and without cracking or fraying
- There are no joins or areas of cable with tape.
- It is not badly kinked
- The length of lead is appropriate for the positioning of the appliance
- Inspect the appliance casing for deterioration or damage
- If readily visible, check that the wiring terminations on the appliance are correctly made. DO NOT remove any covers
- NEVER run cables under carpets or rugs etc
Inspect the plug prior to use to ensure:

- That it is in good condition without any missing parts. Then remove the cover.
- There are no strands of wire shorting terminals within the plug top or, making an electrical path to the outside of the plug
- That the cable clamp grips firmly the outer insulation of the cable.

8 HEALTH & SAFETY IMPLICATIONS
There are no health and safety implications involved in complying with this policy. There are adverse implications in non-compliance. Non-compliance could lead to failure of portable electrical equipment to danger resulting in electrical shock or burns, or electrical fires.

<table>
<thead>
<tr>
<th>Procedure Author – Resilience and Safety</th>
<th>Procedure Owner – Resilience and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Policy Statement - Health, Safety and Wellbeing Policy</td>
<td>Public Access or Staff Only Access - Staff</td>
</tr>
</tbody>
</table>
### Appendix 1

**GUIDANCE FOR OFFICES AND OTHER LOW RISK ENVIRONMENTS**

<table>
<thead>
<tr>
<th>EQUIPMENT/ENVIRONMENT</th>
<th>USER CHECK</th>
<th>VISUAL INSPECTION</th>
<th>INSPECTION TESTING</th>
<th>UNIVERSITY OF THE WEST OF SCOTLAND PROCEDURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery operated (less than 20 volts)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Extra low voltage (less than 50 volts AC)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>IT equipment (PC’s/VDU’s)</td>
<td>No</td>
<td>Yes 4 years</td>
<td>Yes Up to 4 years</td>
<td>Equipment in computer laboratory’s shall be inspected and tested every 4 years.</td>
</tr>
<tr>
<td>Photocopiers/faxes Not hand held (rarely moved)</td>
<td>No</td>
<td>Yes 4 years</td>
<td>Yes Up to 4 years</td>
<td>Inspected and tested every 4 years.</td>
</tr>
<tr>
<td>Double insulated. Not hand held. E.g. slide projectors fans, table lamps, (moved occasionally)</td>
<td>Yes, Each use</td>
<td>Yes 1 year</td>
<td>Yes 1 years</td>
<td>Inspected annually and tested annually.</td>
</tr>
<tr>
<td>Double insulated hand held E.g. floor cleaners</td>
<td>Yes, Each use</td>
<td>Yes 6 months – 1 year</td>
<td>Yes 1 – 2 years</td>
<td>Inspected and tested annually.</td>
</tr>
<tr>
<td>Earthed equipment (Class 1) e.g., electric kettles, some floor cleaners</td>
<td>Yes, Each use</td>
<td>Yes 6 months – 1 year</td>
<td>Yes 1 – 2 years</td>
<td>Inspected and tested annually.</td>
</tr>
<tr>
<td>Lead and plugs / extension</td>
<td>Yes, Each use</td>
<td>Yes 6 months – 1 year</td>
<td>Yes 1 – 2 years</td>
<td>Inspected and tested annually.</td>
</tr>
<tr>
<td>Plug in rcd’s</td>
<td></td>
<td></td>
<td></td>
<td>If a portable appliance includes</td>
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</tbody>
</table>
A portable RCD this should accompany the appliance. So that it can be inspected and tested at the same time.

<table>
<thead>
<tr>
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<th>annual test and inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLT Equipment in teaching rooms</td>
<td>No</td>
<td>3-6 months</td>
<td>12 monthly</td>
<td></td>
</tr>
<tr>
<td>Student Accommodation, University owned equipment</td>
<td>No</td>
<td>Yes 6 months – 1 year</td>
<td>Yes 1 – 2 years</td>
<td>Inspected and tested annually</td>
</tr>
<tr>
<td>Student Accommodation, Student owned equipment</td>
<td>Yes, Each use</td>
<td>No</td>
<td>No</td>
<td>Inspected and tested at the start of the academic year, but no records kept with the exception of tagging the equipment.</td>
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</tbody>
</table>

NB: Inspection and testing should also be carried out:

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
Appendix 2

6. TESTING ELECTRONIC EQUIPMENT

Concern has been expressed that the use of test equipment which generates high test currents and voltages may damage electronic equipment or may corrupt data stored on computer hard disks. Taking into account the circumstances relating to the environment where sensitive electronic and computer equipment will normally be used, how it is used and the fact that this type of appliance is, in the main, moved only infrequently, University authorities accept that safety testing may be restricted to the appliance power lead and plug, and that visual inspection of the equipment may be the norm, unless the inspection indicates that full testing is necessary.

Where a full safety test is considered advisable, it is recommended that an earth continuity test at 100mA be undertaken in place of the standard 4/8/25 amp earth bond test. This can only be undertaken with a Metrel Omega PAT M12140 tester, or equal and approved type of equipment.