

Electrical Safety: Portable Appliance Testing (PAT)

Applicable Legislation

Electricity at Work Regulations 1989

Purpose

Regular inspection of equipment is an essential part of any preventative maintenance program whilst practical experience of the use of the equipment may help to determine the frequency at which the preventative maintenance needs to be carried out. Records of maintenance, including test results, should be kept throughout the working life of the equipment.

Scope

This procedure applies to all portable equipment used in corporate buildings and schools together with allocated work equipment used away from a formal workplace.

Other than the fixed wiring installation, all electrical equipment, whether permanently connected or connected by a plug and socket, should be inspected & tested.

Not all electrical equipment will need a portable appliance test. Further details on how to ensure the safety of electrical equipment and how to carry out user checks and visual inspections can be found in the HSE's [Maintaining portable electric equipment in low-risk environments](#) pamphlet.

Definitions

A '*portable appliance*' is defined as any item of equipment with a lead and a plug and which is normally moved around or can be moved and is connected to the mains supply by a standard 3 pin plug.

General Requirements

The main requirements of this procedure are:

- All electrical items covered by Portable Appliance Testing must be inspected and tested on a regular basis by a suitably trained and competent person.
- A register of portable electrical equipment is maintained and a record is kept of when it is checked, inspected and tested.
- Based on a suitable and sufficient risk assessment which takes into account the amount of wear and tear items of portable electrical equipment receive in establishments/settings, the authority requires that items of equipment are visually checked before use and given a formal test as frequently as determined by the risk assessment.

- Any item failing its required inspection or test must be withdrawn from service immediately and not re-used until the fault(s) have been rectified and it has been re-tested and successfully passed the PAT tests or disposed of and replaced as necessary.
- All new electrical items must be recorded before use, inspected and tested within the warranty period and regularly thereafter. Second hand items must be tested before use and regularly thereafter.
- 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.

Frequency of inspections and testing

Frequency of inspections and testing should be determined using a risk assessment. This should include consideration of:

- The environment the appliance is both used and stored in, e.g. building site, office, etc.
- The users, the likelihood of reporting any damage and the extent of any misuse or abuse of the equipment.
- The equipment construction - Class I or Class II double insulated
- The equipment type, whether hand-held, fixed, IT, etc.
- Frequency of use - kettle used many times a day, fridge that is not moved, etc.
- Type of installation for static equipment - flexes and spurs etc.
- Previous test records - history will provide information of the equipment life and its level of use/misuse/abuse

On-going test frequency should be risk assessed by the duty holder taking into account the findings of inspections and tests, and the frequency increased or decreased if necessary.

Suggested ¹inspection and testing intervals are included in Annex I.

Responsibilities

Property & Facilities Service Provider (Corporate Estate):

- Carry out all programmed formal associated inspection and testing of council portable appliances (PAT) used on the premises as identified by risk assessment.
- Carry out all programmed formal associated inspection and testing of all 110v electrical equipment on Fire Service vehicles.
- Once tested, items shall be tagged and logged.

¹ HSE Publication HSG107: Maintaining portable and transportable electrical equipment

- Inform the Manager responsible for the premises of any equipment that fails inspection and testing, ensuring it is labelled accordingly to prevent continuing use.

Schools:

- The responsibility for carrying out all inspection and testing of portable appliances (PAT) and associated consequential tasks is a delegated responsibility.
<https://www.gov.uk/guidance/essential-school-maintenance-a-guide-for-schools>

Premises Responsible Manager:

- Do not permit non-council portable appliances or equipment to be used on the premises unless evidence of a valid inspection and test can be evidenced e.g. hirers bringing their own electrical equipment.
- When advised of any equipment that fails inspection and testing ensure it is taken out of use immediately and arrange for its safe repair/replacement/disposal.

Employees:

- Carry out regular visual inspections of allocated personal electrical equipment e.g. laptop power transformers and cables, mobile phone chargers etc., to ensure they are safe for use. Report any damage immediately and take the damaged item out of use until rectified.

Check for:

- damage to the lead including fraying, cuts or heavy scuffing,
- damage to the plug, e.g. to the cover or bent pins;
- coloured wires visible where the lead joins the plug;
- damage to the outer cover of the equipment itself, including loose parts or screws;
- signs of overheating, such as burn marks, melting or staining on the plug, lead or piece of equipment.

For further information and advice:

Property Helpdesk	Property.Helpdesk@Oxfordshire.gov.uk	Tel: 08081 566 659
OCC Health and Safety Team	healthandsafetyhelp@oxfordshire.gov.uk	Tel: 03300 240849
Health and Safety Executive (HSE)	http://www.hse.gov.uk/electricity/faq-portable-appliance-testing.htm	

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ANNEX I Suggested inspection and testing intervals:

HSE Publication 107: Maintaining portable and transportable electrical equipment

Type of business		User checks	Formal visual inspection	Combined inspection and test
Equipment hire		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	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
Office information technology rarely moved, eg desktop computers, photocopiers, fax machines		No	Yes, 2–4 years	No if double insulated, otherwise up to 5 years
Double insulated <input type="checkbox"/> (Class II) equipment moved occasionally (not hand-held), eg fans, table lamps		No	2–4 years	No
Hand-held, double insulated <input type="checkbox"/> (Class II) equipment, eg some floor cleaners, some kitchen equipment		Yes	Yes, 6 months – 1 year	No
Earthed (Class I) equipment, eg electric kettles, some floor cleaners		Yes	Yes, 6 months – 1 year	Yes, 1–2 years
Cables, leads and plugs connected to Class I equipment, extension leads and battery charging equipment		Yes	Yes, 6 months – 4 years depending on type of equipment it is connected to	Yes, 1–5 years depending on the equipment it is connected to

Cables, leads and plugs connected to Class II equipment should be maintained as part of that equipment. Cables leads and plugs not dedicated to an item of equipment should be maintained as individual items as appropriate.

Over time, when you look at the results of user checks, formal visual inspections and portable appliance tests you will notice trends. These may tell you that you need to look at or test electrical equipment more or less often, depending on the number of problems being found.

If electrical equipment is grouped together for testing at the same time, you should use the shortest testing interval in the group rather than the longest. Alternatively, it may be appropriate to group your electrical equipment by testing interval.