



Manual for Principals and Governors

Portable electrical appliances

Introduction

The Regulations covering the maintenance of portable electrical equipment are the Electricity at Work Regulations (NI) 1991 which require portable electrical equipment to be maintained in a safe condition. The duty is qualified by the words *so far as is reasonably practicable*. It is the objective of this guidance to ensure that portable electrical equipment is maintained and tested in order to reduce the risk of accident or injury to the users of that equipment. The guidance borrows significantly from the HSE publication: *Maintaining portable electrical equipment in low-risk environments* INDG236(rev2), and applies it to a school environment.

Guidance Details

Equipment Inventory

Each school requires an up to date list of all portable electrical appliances, i.e. any electrical equipment with a domestic plug top, within the school; to include type, serial number and location. If your school has had this work previously done by a contractor, an inventory should already exist. It should be kept up to date with new equipment added and discarded equipment removed from the list.

Portable appliance testing regime

A portable appliance testing regime (PAT) involves all staff and possibly, though not necessarily, a trained electrician for the combined inspection and testing phase. Checks can be carried out by an Education Authority (EA) approved contractor, however, if a member of staff is responsible for carrying out PAT, that person should be trained, and the most appropriate test equipment purchased. Contact your EA health and safety adviser if you require further information on this equipment and training.

User checks

All staff should carry out their own user checks before the electrical equipment is used, while it is disconnected. These checks should be carried out on an on-going basis with any defects brought to the attention of school management. Staff should look for:

- 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 bent pins;
- tape applied to the lead to join leads together;
- coloured wires visible where the lead joins the plug (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 on the plug, lead or 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.

Formal visual inspection

To carry out a visual inspection you do not 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.

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

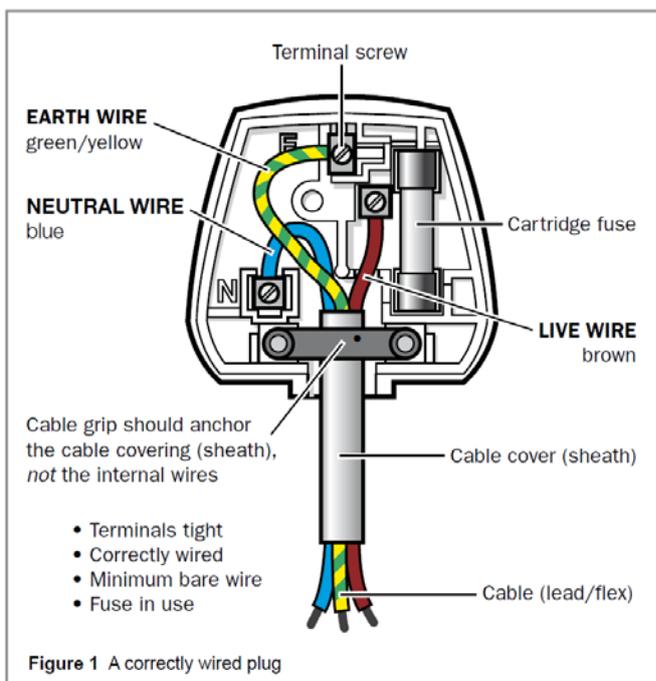
As part of the visual inspection, you should consider whether:

- the electrical equipment is being used in accordance with the manufacturer's instructions;
- the equipment is suitable for the job;
- there has been any change of circumstances; and
- the user has reported any issues.

The visual inspection should include the checks carried out by the user and, where possible, will 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 and it is a proper fuse, not a piece of wire, nail etc.;
- the wires including the earth, where fitted, are attached to the correct terminals (see Figure 1);
- the terminal screws are tight;
- the cord grip is holding the outer part (sheath) of the cable tightly; and
- no bare wire is visible other than at the terminals.

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



Combined inspection and testing

As stated previously, a portable appliance test does not need to be carried out by an electrician, but greater knowledge and experience is needed than for inspection alone, and the person performing the test must have the right equipment for the task. They should know how to use the test equipment and how to interpret the results. A common practice for some post primary schools is to train a technician for this role. As primary schools do not employ technicians they tend to engage contractors for PAT.

It is important to continue to carry out user checks on electrical equipment that has been tested. This is because portable appliance testing can only give an indication of the safety of an appliance at the time of the test and does not imply that the item will be safe for a further period of time.

The person carrying out the test should not assess when the next test will be due as this decision should be made by school management through risk assessment.

Portable and movable equipment

A portable electric appliance is any item that can be moved, either connected or disconnected from an electrical supply. Portable items generally have a lead (cable) and a plug. Some small items, such as hairdryers, that are hardwired into an electrical supply are still considered portable appliances whereas larger items such as cookers that are hardwired are not.

Personal Property

Portable electrical equipment owned by members of staff is not to be brought into school unless they have been subject to the appropriate check, inspection or test. The principal is to be made aware of the intention to use any such equipment in school.

Earthed equipment and double insulated equipment

When deciding whether to test electrical equipment, you need to consider the type of construction of the equipment in use. There are two basic types of electrical equipment construction – Class I (earthed) and Class II (double insulated).

- **Earthed equipment:** For safety reasons, Class I equipment has an earth connection. If there is a fault within the equipment there is a possibility that the outside of the equipment could cause an electric shock if the earth connection is not there. As a result, it is recommended that Class I equipment has a portable appliance test to ensure the earth connection is sound.
- **Double insulated equipment:** Class II equipment is sometimes referred to as 'double insulated' equipment. This means that there is extra insulation within the construction of the equipment to prevent accidental contact with live parts, even if there is a fault.

Class II equipment does not need an earth connection to maintain safety. It will not need a portable appliance test, although you should ensure that **user checks and visual inspections are carried out** as the integrity of the equipment casing is a key safety feature. Class II

equipment is marked with a  If you cannot see this symbol, you should assume that the item is a Class I appliance and carry out a portable appliance test.

Suggested checking regime

Equipment/Environment	User Checks	Formal visual inspection	Combined inspection and testing
Battery operated (less than 40 volts)	No	No	No
Extra low voltage (less than 50 volts AC) e.g. Telephone equipment, low voltage desk lights	No	No	No
Desktop computers, VDU screens	No	Yes, 2-4 years	No if double insulated, otherwise up to 5 years
Photocopiers, fax machines. Not hand held, rarely moved	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, table lamps	No	Yes, 2-4 years	No
Double insulated  (Class II) equipment. Hand held, e.g. some floor cleaners, some kitchen equipment	Yes	Yes, 6 months – 1 year	No
Earthed equipment (Class I). Electric kettles, some floor cleaners, some kitchen equipment and irons	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	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

Note: Over time, when you look at the results of user checks, visual inspections and portable appliance tests, you will notice trends. These may tell you that you need to look at, or test electrical equipment less (or more) 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.

Glossary of terms and acronyms

Class I Appliance	A portable electrical appliance with an earth connection.
Class II Appliance	A portable electrical appliance is also referred to as 'double insulated', i.e. there is extra insulation within the construction of the equipment to prevent accidental contact with live parts. The appliance is marked with the following symbol 
HSE	Health and Safety Executive. The enforcing authority for health and safety in GB. In Northern Ireland it is the Health and Safety Executive for Northern Ireland.
PAT	Portable Appliance Testing.

ASSOCIATED DOCUMENTS

Electricity at Work Regulations (Northern Ireland) 1991
<http://www.legislation.gov.uk/uksi/1989/635/contents/made>

Maintaining portable electrical equipment in low-risk environments INDG236(rev3)
<http://www.hse.gov.uk/pubns/indg236.pdf>

Maintaining portable electrical equipment HSG107 (Third edition) HSE Books 2013 ISBN 978 0 7176 6606 5 www.hse.gov.uk/pubns/books/hsg107.htm

Memorandum of guidance on the Electricity at Work Regulations 1989. Guidance on Regulations HSR25 (Third edition) HSE Books 2007 ISBN 978 0 7176 6636 2
www.hse.gov.uk/pubns/books/hsr25.htm

HSE's '*Electrical safety at work*' microsite: www.hse.gov.uk/electricity