



Health & Safety Specialists

Portable Appliance Equipment:

There is still a lot of confusion around the whole area of Portable Appliance Testing (PAT) and how frequently this should be carried out. It should be a case of not just getting someone in to do it for you but also empowering named employees to be involved in the management of portable appliances as well, through visual inspection and logging where and how appliances are used through out the premises.

There are many European standards and guidance notes regarding portable appliances and equipment, though they do not establish a common and specific definition of such equipment. Even so, there does seem to be a consensus of opinion that such equipment is either hand held whilst being connected to the supply, or is intended to be moved whilst connected to the supply, or is capable of being moved without undue difficulty whilst connected to the supply.

It is usual for this equipment to be connected to the supply via a plug and socket, however this is not a requirement for electrical equipment to be deemed portable or transportable. It is common to define a portable appliance by saying that it is 'anything with a plug top on the end of it'. This is a mistake as it may mean that there are some appliances in the system that are never tested. The National Association of Professional Inspectors and Testers (napit) define a portable appliance as 'any electrical item which can or is intended, to be moved whilst connected to an electrical supply.' The regulations cover all items of in-service electrical equipment; this includes all movable items connected to the mains supply by 3A or 13A BS1363 plugs, BS EN60309-2 industrial plugs. In addition to being responsible for the safety of their own portable appliances, companies are also responsible for electrical equipment brought on site by employees and contractors.

The IEE Code of Practice gives guidance on the various equipment types:

Portable appliance - An appliance of less than 18kg in mass that is intended to be moved whilst in operation or an appliance which can easily be moved from one place to another, e.g. vacuum cleaner, toaster, food mixer, etc.

Movable equipment (transportable) – either 18 kg or less in mass and not fixed, e.g. electric fire, or equipment with wheels, castors or other means to facilitate movement by the operator as required to perform its intended use, e.g. vacuum cleaner.

Hand Held equipment - this is portable equipment intended to be held in the hand during normal use, e.g. hair dryer.

Stationary equipment - this equipment has a mass exceeding 18kg and is not provided with a carrying handle, e.g. refrigerator

Fixed Equipment - this equipment or an appliance, which is fastened to a support or otherwise secured in a specific location, e.g. bathroom heater, TV.

Appliances for building in - This equipment is intended to be installed in a prepared recess such as a cupboard or similar. In general, equipment for building in does not

have exposure on all sides because one or more of the sides, additional protection against electrical shock is provided by the surroundings, e.g. built in electric cooker. **Information technology equipment** - includes electrical business equipment such as computers and mains powered telecommunications equipment, and other equipment for general business use, such as mail processing machines, VDU's photo-copiers.

Assessing the frequency of testing

The Health & Safety Executive offers no absolute rules on the frequency of the testing and inspection of portable appliances. The Memorandum of Guidance on the Electricity at Work Regulations suggests that 'regular inspection of equipment is an essential part of any preventative maintenance program', but no attempt is made to specify the intervals of time implied by the word 'regular'. The reason for this omission is obvious; different situations require different measures in order to meet the requirement that the danger is prevented. The factors which effect the frequency of testing must be assessed by the duty holder who thereby makes the judgement. In arriving at a judgement as to the frequency of testing, a duty holder is likely to assess the following factors:-

1. The environment - equipment installed in a benign environment will suffer less damage than equipment in an arduous environment.
2. Users - if the users report damage as and when it becomes evident, hazards will be avoided. Conversely, if equipment is likely to receive unreported abuse, more frequent inspection and testing is required.
3. The equipment construction - the safety of a Class 1 appliance is dependant upon a connection with earth of the electrical installation. If the flexible cable is damaged the connection with earth can be lost. Safety of Class 2 equipment is not dependent upon the fixed electrical installation.
4. The equipment type - appliances which are hand held are more likely to be damaged than fixed appliances. If they are Class 1 the risk of danger is increased, as the safety is dependant upon the continuity of the protective conductor from the plug to the appliance.

Visual Inspection

Formal visual inspections should only be carried out by persons competent to do so with the results of the inspection documented. The following must be considered when carrying out the inspection:

Suitability of the equipment/environment - the equipment should be assessed for its suitability for the environment or the nature of the work being undertaken. When the work environment is harsh or hazardous particular care needs to be taken when selecting the equipment and assessing the frequency of inspection and testing.

Good Housekeeping – a check should be made to ensure the equipment is installed and is being operated in accordance with the manufacturers instructions.

Notwithstanding the manufacturers' instructions, the following are examples of items which should be checked:

- (a) Cables located so as to avoid damage
- (b) Means of disconnection/isolation readily accessible

- (c) Adequate equipment ventilation
- (d) Cups, plants and work material correctly placed to avoid spillage
- (e) Equipment positioned to avoid strain on cord
- (f) Equipment is being operated with the covers in place and any doors are closed
- (g) Indiscriminate use of multi-way adaptors and trailing sockets is avoided
- (h) No unprotected cables run under carpets

Disconnection of equipment - the means of isolation from the electricity supply must be readily accessible to the user, i.e. in normal circumstances it must be possible to reach the plug and socket without too much difficulty.

The condition of the equipment - prior to the commencement of the users should be asked if they are aware of any faults and if the equipment works correctly. The following items need to be inspected:

- (a) The flexible cable
- (b) The socket outlet, if known
- (c) The appliance
- (d) The plug head, although some of the following checks may not be possible for equipment fitted with a non accessible plug
 - (i) Check detachable power cords to Class 1 equipment incorporates a CPC
 - (ii) Identify signs of overheating
 - (iii) Internal inspection; cord security, polarity, connections
 - (iv) If non-rewirable plug; cord security, burning odours
 - (v) Correct size fuse fitted, BS marked, ASTA marked
 - (vi) Security of plug cover
 - (vii) Check the flexible cable connections and anchorage at the equipment, if practical

It is recommended that all portable appliances should be listed within the premises and the fuse rating associated with the stated appliance, along with the location. In addition when new appliances are introduced then a log should be kept of when and where the appliance has been introduced, and when portable appliances are decommissioned then another log should be kept to highlight these also. Ensure that a proper log is kept on all portable appliances used within your premises.

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