



## **Portable Appliance Testing (“PAT” Testing).**

### *Did you know that...?*

The UK Provision and Use of Work Equipment Regulations 1998 (PUWER) requires that *“every employer shall ensure that work equipment is so constructed or adopted as to be suitable for the purpose for which it is used or provided”*.

The Electricity at Work Regulations 1998 states *“As may be necessary to prevent danger, all systems shall be maintained so as to prevent so far as reasonably practicable, such danger.”*

This means that employers (and the self-employed) must ensure that all electrical work equipment is safe, suitable for the purpose and properly maintained in good order.

The scope of the legislation covers everything from small portable equipment e.g. hand drills to fixed 400 kV distribution systems. Note that different inspection and maintenance regimes are recommended for fixed electrical installations and portable electrical equipment.

### **Testing of portable electrical equipment.**

The routine inspection and testing of portable electrical appliances (or equipment), especially those used in severe environments such as building sites, is an important safety requirement.

The HSE strategy suggests user checks, backed up by formal visual inspection and combined inspection and test.

#### ***User Check***

The user of the equipment should be encouraged to check the condition of the equipment prior to use. It is relatively easy for people to spot and report signs of damage, overheating and misuse.

#### ***Formal Visual inspection.***

The most important monitoring of portable appliances is through a regular formal visual inspection. This should be carried out by someone who has been properly trained to perform a more thorough check of the equipment. This may include examining plugs, fuses, cable terminations etc.

#### ***Combined Inspection and Testing.***

Faults may arise in electrical equipment that are not readily apparent. For example internal damage may result from misuse or internal electrical connections may

deteriorate over time. One way to identify such defects is through an electrical test and this is commonly done using an instrument known as a Portable Appliance Tester (a “PAT” tester). In low risk environments, a properly trained, competent member of staff can perform these tests using a suitable “off the Shelf” PAT tester. In higher risk areas, a more highly trained specialist may be needed to perform complex tests and interpret the results.

There are no set statutory periods for formal visual inspection and test. The maintenance regime should be appropriate to the environment and duty for which the equipment is used. Electrical testing in a low-risk area (e.g. in an office) would be less frequent than in say a harsh industrial environment. Guidance on inspection intervals can be found in the IEE and HSE documents identified below.

### ***Records***

Although there is no mandatory requirement to produce and keep records on the condition of electrical equipment, the HSE Memorandum of guidance on the Electricity at Work Regulations (HS(R)25) advises that records of maintenance, including test results, will enable the condition of equipment and the effectiveness of maintenance policies to be monitored.

The IEE Code of Practice for In-Service Inspection and Testing of Electrical Equipment recommends that a log be kept of the condition of equipment, together with records that may be held on paper or on electronic memory.

In the event of a prosecution arising from an injury relating to a portable appliance, it would assist the employer’s case if they can produce up to date, accurate records to indicate that they had taken reasonable actions to comply with the Electricity at Work Regulations.

### **Help and Advice.**

The IEE, with the support of the UK Government’s Health and Safety Executive (HSE), has prepared guidance, including suggested initial frequency of inspection and testing of equipment in a ‘Code of Practice for In-service Inspection and Testing of Electrical Equipment’. A description of the CoP and table of contents can be found at <http://www.theiet.org/publishing/wiring-regulations/index.cfm>. The IEE also publishes guidance on the maintenance of fixed electrical installations.

The IEE offers short courses to train staff in the use of portable appliance testing equipment, see <http://www.theiet.org/events/>.

The HSE has published a couple of free leaflets on electrical safety in the workplace:

- Maintaining portable appliances in offices and other low-risk environments (IND(G)236L).
- Maintaining portable electrical equipment in hotels and tourist accommodation (INDG237)

Both contain answers to common questions and practical advice on visual inspection and inspection intervals and are available on the HSE website see <http://www.hse.gov.uk/pubns/elecindx.htm>.

The HSE also publishes several guidance books including:

- Maintaining Portable and Transportable Electrical Equipment ( HSG107, ISBN 0717628051).
- Memorandum of guidance on the Electricity at Work Regulations 1989 (HSR25, ISBN 0717616029)

Further information is available on the HSE's Electrical Safety at Work website [www.hse.gov.uk/electricity](http://www.hse.gov.uk/electricity).

*These Briefings contain a summary of recent Health & Safety issues, provided for general information purposes only, and should not be relied upon as legal advice. The IEE has tried to make the Briefings accurate and informative, but they have not been prepared by a lawyer and may not constitute an up-to-date summary of the law. The IEE accepts no liability for your use of these Briefings. Further details and information on broader Health & Safety issues can be obtained from the Government's Health and Safety Executive. Legal advice should be obtained on any specific issues.*

For further information about the IEE's Health and Safety Policy Advisory Group please contact:

Health and Safety Policy Advisory Group Secretary  
Policy Department,  
IEE,  
Michael Faraday House,  
Six Hills Way,  
Stevenage, Herts.  
SG1 2AY