**Introduction**

The purpose of this guidance is to assist managers and others who have a duty to ensure that electrical equipment and systems are safe. It deals, amongst other things, with the testing (and frequency of testing) of portable electrical appliances and of fixed installations.

**Scope**

The information contained in this guide is based on the Electricity at Work Regulations 1989 and other sources detailed in useful documents. The legislation places legal implications on employers to ensure the safety of electrical appliances in the workplace.

While the duty of complying with the regulations rests with the Council, everyone who uses electrical equipment at work has certain responsibilities.

**The why, what and how**

There are three parts to the electrical testing:

* visual inspection
* earth continuity test / insulation test (PAT testing)
* fixed electrical installations

**Visual Inspection**

The visual inspection looks at damage to the cable, damage to the plug, damage to the case, loose components and also that the environment that the device is used in is appropriate.

A relatively brief user check (based upon simple training and perhaps assisted by the use of a brief checklist) can be a very useful part of any electrical maintenance regime. However, more formal visual inspection and testing by a competent person may also be required at appropriate intervals, depending upon the type of equipment and the environment in which it is used

**PAT testing**

Portable appliance testing (PAT testing) is the most visible and recognised feature of ‘electricity at work’. All too frequently, employers believe they are protecting themselves and their employees simply by carrying out the annual round of equipment tests.

The PAT testing should be carried out regularly (commonly every 12 months) and should be carried out by trained, authorised personnel. In many cases third-party electrical contractors carry out PAT testing.

The portable appliance testing table (Appendice 1) is based on HSE guidance for portable appliance tests (sometimes referred to as “PAT testing”)

The need for tests and/or other protective measures should be closely related to the risk arising from the equipment and how it is used. For example, an extension leads which is used in a protected position and is never moved, will cause less risk than one which is being constantly moved from floor box to floor box. A computer which sits in one position on a desk for a number of years will be considered to be a very low risk piece of electrical equipment.

**Fixed electrical installations**

Fixed electrical installations should be tested by a competent person at least every five years unless there is some cause to suspect the integrity or safety of the system.

Remedial works that have been highlighted during a fixed electrical test will be categorised as C1, C2, C3 and health and safety.

It is the responsibility of Kent County Council to action any C1 and C2 remedial works which have been highlighted in the report.

In the case of C3 and health & Safety work required it is the responsibility of the school to action the remedial works, if the premise is a Kent corporate building the responsibility will be with KCC.

**Associated procedures and documentation**

The documentation below refers to legislation and to Industry Standards. To read these in greater detail, please visit the Health and Safety Executive (HSE) website or legislation.gov.uk.

**Documentation**

* HSG85 (Third edition)
* HSR25 (Third edition)

**Frequently Asked Questions**

**What is portable appliance testing?**

Portable appliance testing (PAT) is the term used to describe the examination of electrical appliances and equipment to ensure they are safe to use. Most electrical safety defects can be found by visual examination, but some types of defect can only be found by testing. However, it is essential to understand that visual examination is an essential part of the process because some types of electrical safety defect can't be detected by testing alone.

**Do I need to have all my electrical equipment tested every year?**

No. This is not necessarily required but a degree of management control will be required to formulate a testing programme. See the portable appliance testing (PAT) table for guidance as to whether or not, and how frequently, testing is necessary. Any piece of electrical equipment that sustains damage or becomes worn, or where there is any reason at all to suspect its safety, should be taken out of use, clearly labelled and tested before being used again.

**How often should fixed electrical installation be tested?**

Generally, given the conditions under which most fixed installations in KCC establishments are used, testing every five years is considered adequate. However, if the installation is being used under hostile conditions (such as severe damp, in the presence of reactive chemicals or where there is a perceived risk of mechanical damage to the installation) more frequent testing must be considered.

**Which pieces of electrical equipment should I regard as carrying the highest risk of developing a fault which could prove dangerous?**

Any piece of electrical equipment which is connected to the mains supply could, if it develops a fault, delivers a shock. Experience shows, that extension leads fail with significant frequency, mainly because of abuse and hostile operating conditions (such as being used in lidded floor boxes, being pulled or damaged by heavy objects being placed on them). Equipment which is used near or with water, such as kettles and coffee makers, also carries a higher risk because water conducts electricity. If parts of the equipment that are supposed to stay dry are allowed to become wet, it could cause an electric shock. Equipment, if it is used outdoors - should be considered to carry a higher risk because of the potential for cable damage and various weather conditions e.g. damp in the air or extreme heats.

**Do I need to test new equipment?**

New equipment should be supplied in a safe condition and not require formal portable appliance inspection or testing. However, a simple visual check is recommended to verify the item is not damaged.

The Electricity at Work Regulations 1989 require that any electrical equipment that has the potential to cause injury is maintained in a safe condition. However, the Regulations do not specify what needs to be done, by whom or how frequently (i.e. they don't make inspection or testing of electrical appliances a legal requirement, nor do they make it a legal requirement to undertake this annually).

**I have been told that I have to get an electrician to do portable appliance testing work. Is this correct?**

The person doing testing work needs to be competent to do it. In many low-risk environments, a sensible (competent) member of staff can undertake visual inspections if they have enough knowledge and training. However, when undertaking combined inspection and testing, a greater level of knowledge and experience is needed, and the person will need:

* the right equipment to do the tests
* the ability to use this test equipment properly
* the ability to properly understand the test results.

**Is Portable Appliance Testing (PAT) compulsory?**

No. The law simply requires an employer to ensure that their electrical equipment is maintained in order to prevent danger. It does not say how this should be done or how often. Employers should take a risk-based approach, considering the type of equipment and what it is being used for. If it is used regularly and moved a lot e.g. a floor cleaner or a kettle, testing (along with visual checks) can be an important part of an effective maintenance regime giving employers confidence that they are doing what is necessary to help them meet their legal duties. HSE provides guidance on how to maintain equipment including the use of PAT.

**Can employees bring in personal electrical items?**

As a general rule all electrical equipment used in KCC buildings and schools should have been purchased by the organisation, this will be maintained and PAT tested appropriately.

It is advised that the use of personal equipment is not encouraged as the Manager / Headteacher should provide staff with all the essential equipment to carry out their role.

It is however accepted that in circumstances staff may request to bring in their own equipment, this includes kettles, radios etc. In these instances the equipment must be registered and PAT tested.

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| **Equipment / Environment** | **User checks** | **Formal visual inspection** | **Combined inspection and testing** |
| Battery-operated  (less than 20 Volts) | No | No | No |
| Extra low voltage:  (less than 50Vac)  e.g. telephone  equipment | No | No | No |
| Information technology: e.g. desktop computers, VDU screens | No | Yes, 2-4 years | No if double insulated – otherwise up to 5 years |
| Photocopies, fax machines: NOT hand-held. Rarely moved | No | Yes, 2-4 years | No if double insulated – otherwise up to 5 years |
| Double insulated equipment: NOT hand-held. Moved  occasionally, e.g.  fans, table lamps,  slide projectors | No | Yes, 2-4 years | No |
| Double insulated equipment: HAND-HELD e.g. some floor cleaners | Yes | Yes, 6 months - 1 year | No |
| Earthed equipment (Class 1): e.g. electric kettles, some floor cleaners | Yes | Yes, 6 months - 1 year | Yes, 1 - 2 years |
| Cables (leads) and plugs connected to the above. Extension leads (mains voltage) | 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. |