

## The requirements for portable appliance testing

An article for the Association of British Theatre Technicians magazine 'Sightline' about the new PAT guidance

Most of us are familiar with the little green sticker often seen on electrical appliances in the work place, which typically state something along the lines of '*Electrical safety test – Passed*'. So what does this sticker actually represent? This short article explores the salient legal requirements and explains the rationale behind the new updated ABTT guidance.

Electricity is a potent source of energy normally used to our advantage such as boiling the kettle to make the tea, heating air to keep us warm or giving us light. It is capable of doing a lot of damage very quickly if left unchecked – such as to property in the form of fires or to people as an electric shock for example. For that reason the law in the UK (in the form of the *Electricity at Work Regulations 1989, (EWR)*) is very clear about ensuring safety with electricity and it requires that electrical equipment shall be maintained so as to prevent danger. It also makes it an explicit obligation for employers to ensure that the workplace is electrically safe, which includes the fixed wiring as well as equipment plugged into sockets for example.

Another area of Legislation titled *The Provision and Use of Work Equipment Regulations 1998* (PUWER) places duties on people and companies who use, operate (or have control over) work equipment whether owned by them or not. One of the main requirements is that work equipment (which could be anything from the office printer to a light on stage or a ladder for example) should be regularly inspected to ensure safety. So while the EWR requires equipment to be maintained, PUWER reinforces that with the need to inspect it regularly and keep a record, and that's why equipment has that little green sticker to show it's undergone the inspection process. An often overlooked aspect is that there is a requirement for users of equipment to do 'user-checks' each time something is used, a basic cursory check to ensure that there's nothing visibly untoward.

With electrical equipment it's not always possible to identify some types of fault just by looking at an appliance; for example a broken wire inside the flex of an extension lead may not be visible to the naked eye, yet could impair safety considerably. So when checking equipment in line with PUWER, it is necessary to conduct some basic electrical tests to ensure that the safety measures of insulation and continuity of conductors are good. So the process involves a visual inspection to check for damage, electrical testing and then a functional check to make sure the appliance actually works. Finally the result of that process is recorded and a label stuck onto the appliance. This process is usually referred to as *Portable Appliance Testing (PAT)* or, more colloquially, just *PAT testing*.

The introduction of PUWER spawned a new industry in respect of electrical testing to the extent that you can gain qualifications in it or even join the PAT Association. But it is important not to lose sight of the actual intent, which is to make sure that equipment is safe, itself a relatively straightforward process.

A big source of confusion was – and still is – the debate over how often equipment should be checked. The Institution of Engineering Technology has published guidance in the form of its Code of Practice for In-Service Inspection and Testing, although this is a 'one size fits all' guide and does not

give much guidance on areas pertinent to the theatre industry. A key highlight in the most recent edition following input from the HSE is that the inspection and testing frequency should be more risk based.

The ABTT is often asked by members how often equipment should be tested which is not dissimilar to asking 'how long is a piece of string?' The answer of course is 'is it long enough?' Testing frequency depends on the equipment, the environment it's used in, the frequency of use and so on. There is no definitive answer. An extension lead powering a light in a static rig of a west end show needs checking far less often than an extension lead used by the cleaners every day. It's wrong therefore to stipulate that all extension leads should be tested on a weekly basis, and for that reason there is no published document that states what the interval *should* be, only suggestions of what it *might* be.

The HSE has observed two things. Firstly they admitted that until recently, like the rest of the industry, they tested everything in their offices on an annual basis. Secondly they decreed that testing may not always be necessary, a good look might be just as effective. So, leading by example, they changed their policy. To quote them:

*"The HSE is clear that testing equipment including portable appliances can be a useful, and in some instances in essential, part of an effective maintenance regime but testing, if undertaken, is only one element of this. Visual checks by users and regular inspections of the equipment are also vital parts of any maintenance regime and, particularly for appliances that are at low risk of developing hazardous faults, they may be the only action required."*

The driver for this was the review into health and safety legislation conducted by Professor Lofsted. Amongst other electrical things, portable appliance testing was singled out as *"an example of a Regulation that is being applied too widely and disproportionately largely because there are many instances of equipment being inspected and tested too frequently and tested unnecessarily."*

The new ABTT guidance takes the lead from revised HSE guidance as well as the IET Code of Practice and provides a framework for duty-holders (i.e. the person responsible for the equipment) to assess the level of risk and hence specify the frequency of inspection, based on a risk assessment method. It also gives advice on the test required and how to conduct them on theatre equipment.