

'Electrical Safety, Electrical Competence & Changes to PAT Testing Requirements'

Chris Johnston
Electrical Tutor, British Gas Electrical Services

Chris began by explaining that although he is not full-time with British Gas, he is a Chief Examiner with City and Guilds which deals with electrical qualification and verification.

Chris reminded us that his presentation today will be focused on the responsibilities of an electrical duty holder (see slides 5,6 and 7 of Chris's Power Point Presentation www.bhsea.org.uk/8presentations.htm#electrical).



The Responsibilities of the Duty Holder:

The responsibilities fall within Regulation 3 of the Electricity at Work Regulations 1989. If the employer has “control”, then the employer has electrical responsibilities i.e. a duty to comply with relevant health and safety legislation, and is classed as a “Duty holder”. The Duty Holder may be an employee who has control over a budget and/or employees. In large organisations it is normal to have a principal duty holder together with local or other duty holders.

Safe Place of Work:

This is covered by Regulation 4, which is a general but key Regulation:

*“All **systems** shall at **all times** be of such construction as to prevent, so far as is reasonably practicable, **danger**”.*

Chris explained that the duty to provide a safe place of work would include the fixed wiring within the building as well as anything connected or plugged in to it. Note the phrase “...at all times...”, and there are no exceptions to this strict requirement, even if the job will only take a few minutes. BUT note “...so far as is reasonably practicable...”, which does provide for some flexibility.

The wiring should also be in good condition and any work on or near a system

*“shall be carried out in such a manner as not to give rise, so far as is reasonably practicable, to **danger**”.*

This applies even if it is only repairs that are being carried out. Chris drew our attention to the phrase “..give rise to danger...” (see Slide 9 of Chris's presentation), in other words, there does not need to be an accident or injury to have occurred for danger to exist. It's all about **prevention** and not the outcome.

“Any equipment provided under these Regulations for the purpose of

*protecting persons at work on or near **electrical equipment** shall be suitable for the use for which it is provided....”*

Equipment must be in good working order, properly maintained and used correctly.

Strength and Capability of Electrical Equipment (Reg 5):

Chris gave us an example to illustrate this point. It involved a situation where a wooden panel was put in place rather than a metal panel. Chris reminded us that wood is inappropriate in the event of an explosion.

Access and egress to electrical switchgear must be adequate. There should be sufficient space provided to reach equipment for maintenance and repair purposes. Chris commented that most prosecutions come about via general enforcing authority inspections and not necessarily from electrical specialists. Why? Mainly because problems are often easy to spot/pick up.

Regular Maintenance:

Yes! It can be expensive. Chris said, in his experience, that money can be freely available around production areas, but non-productive areas can be perceived as not being worth the spend. Keeping a record of when things are moved or changed can be extremely useful. Records which detail the work of competent persons, including modifications made is evidence that the equipment has been correctly installed.

Periodic Inspection and Testing:

This may be via a third party. A report should be provided that details the recommendations to be carried out. A word of warning here from Chris...the cheapest quote for inspection and testing may just mean that the least amount is done. Chris noted that it can be hard to differentiate between the different levels of work being quoted for. Remember that as soon as the contractor has carried out some work, the duty holder retains responsibility under the Regs.

Chris noted that the Regs talk about “the system”, which is a generic term that means that parts can be missed or overlooked. For example, if you take a piece of equipment such as a hand dryer in the toilet accommodation, and the fixed wiring. The fixed wiring will be checked under the Regs, but the hand dryer may well be overlooked in terms of any formal inspection/testing regime. However, an initial inspection and test on installation should pick up any problems at an early stage. George Allcock, BHSEA Management Committee Member flagged up the fact that user (visual) checks can be very useful. Chris agreed. Visual checks should be part of the testing regime as well as other tests including isolating, disconnecting and the use of an instrument to test.

Person Competent to Prevent Danger and Injury:

If a person is not competent, then supervision must be in place. There is no mention of a qualification within the Regs, moreover Chris’s view is that the competent person should have technical knowledge **and experience**. Shouldn’t be an either or which the Regs seem to indicate. Why? Chris described a situation where an electrician moves between a domestic environment to an

industrial one, the technical knowledge may be there but experience could be lacking! Here is an example of where there would be a need for supervision because of a lack of competency.

IET Wiring Regulations – Seventeenth Edition:

Chris noted that there have been some recent amendments to these Regs., (formerly known as 'IEE', but now changed to IET).

What's New/Noteworthy?

1. Electrical Installations designed more than 2 years ago can comply with the Regs at the time of the concept. Electrical installations designed after December 2011 must comply with the new document. So the Regs are not retrospective. Only new work has to comply with the amended Regs.
2. Periodic Inspection and Testing is qualified by the term 'so far as is reasonably practicable', which means that as far as you have control, you must make sure that the electrical installation complies. Chris added that there is Guidance available from the IET which support the Regs.
3. Certification and Reporting. Here, there is not just a name change, the most significant change is the coding of issues identified/observed during the inspection. Each observation gets coded:
 - **Code C1** means danger present **now**. This must be a breach and has to be reported to the named contact person.
 - **Code C2** means that the issue observed is **potentially dangerous**. Which means that something else needs to occur before the danger exists. So it is urgent but not immediate.
 - **Code C3** is where the inspector makes a suggestion of improvement, for example, in the case of a hand dryer with the earth cut off.

Once the equipment is plugged in, it becomes part of the electrical system and therefore part of the in-house inspection and testing regime. Chris added that there are often problems in places such as hospitals where patients/relatives bring in electrical items from home and plug in to the supply. Care homes are another problem area. Hotels and guest houses are also difficult areas to manage and at the end of the day it will have to come back to 'so far as is reasonably practicable'.

User Checks:

There may be a need to have some level of training together with a reporting procedure. Chris mentioned that he had recently carried out a half day training session with cleaning staff.

Records and Checks:

Records will need to be kept throughout the life of the equipment. Checks will be subject to sampling rates, which are covered in the Regs.

Chris concluded by reiterating the advantages and benefits of employing a competent electrical contractor.

Members' Questions

Mick Collins from Loughborough University asked about compliance and whether there is anything planned along the lines of 'Gas Safe'? Chris said that nothing is expected and that the nearest body we've got is the N.I.C., which is similar to a 'mini' governing body which promotes and sells the quality standard. Chris also mentioned the E.C.A. which is a contractors association which promotes quality but has no monitoring role.

Linda Ley from Unipart Logistics asked about Code C1 and whether, in the case of there being a large number of these, there is any responsibility to report to the Health and Safety Executive (HSE)? Chris said that, in his experience, if the client receiving the C1 agrees for the contractor to do the remedial work there and then, the HSE will not need to be informed. Chris added that where a report is submitted containing a number of C1's, then the client should have known about the situation and dealt with it long before the report came through!

Roger Caleb from the National Grid commented that in his opinion, thermal imaging is useful in detecting electrical problems. It is effective and there is an i-phone App that can be used!

For the full and comprehensive detail of the presentation given today including slides, please refer to the BHSEA website www.bhsea.org.uk

Dally thanked Chris for his excellent presentation. The depth of Chris's knowledge of his subject was clearly demonstrated by the quality of his presentation and the responses to questions raised. Dally went on to introduce our Speaker filling the Members' Corner 'slot' today, BHSEA's very own Tim Prestage, Director of Tim restage Ltd., and BHSEA Vice-Chair: