



# Electricity at Work within Shropshire Council Premises

(see also Shropshire Councils code of practice CP 23 for Registration, inspection and testing of Portable & Transportable Equipment)

## Introduction

The Council recognises its duties and responsibilities under the Health and Safety at Work etc. Act 1974 and the Electricity at Work Regulations 1989 and will endeavour to follow the guidance set out in the Approved Code of Practice – ACoP (HSG 25 - 3<sup>rd</sup> Edition) to the regulations at all times.

Consequently, delegated managers of Directorates will need to take all reasonable steps to ensure the health and safety of employees who use, operate or maintain electrical equipment. The Council also acknowledges that work on electrical equipment and systems can be hazardous and it is the intention that all managers reduce the risks as far as is reasonably practical within their working areas by following the ACoP guidance.

The implementation of this arrangement requires the mandatory co-operation of all members of management and staff, as well as any contractors hired to carry out the installation maintenance and repair of electrical equipment or installation.

Where a problem arises related to electricity at work, employees must inform their line manager immediately so that the necessary measures to investigate and remedy the situation can be taken.

## Arrangements for securing the health and safety of employees and others

Managers shall, in consultation with competent persons\* and employees:

- Ensure that electrical systems and equipment are installed in accordance with the Institution of Engineering and Technology (IET) Wiring Regulations by competent persons (N.B. BS 7671 *Requirements for electrical installations* is also known as the IET Wiring Regulations).
- Ensure that those who carry out any work involving electricity are competent to do so, further;
- No person shall be engaged in any work activity where technical knowledge or experience is necessary to prevent **danger** or **injury**, unless they possess such knowledge and experience to avoid the dangers of electricity.
- Maintain fixed installations in a safe condition by ensuring that routine safety testing and inspection is carried out by competent persons in line with current British standards and recognised testing frequencies in line with BS7671 guidance notes 3 or previous suggested reinspection date.

- Ensure the maintenance inspection and testing of portable and transportable equipment is undertaken as per the frequencies required by Code of Practice 23 (CP23).
- Prohibit live working other than when carried out by a competent person for essential equipment fault diagnosis or testing.
- Prohibit all work on equipment or systems operating above 650 volts: unless carried out under contract by approved contractors who shall be competent, trained and equipped for this work. Exchange any relevant safety information with contractors, ensuring that they are fully aware of (and prepared to comply with) the Councils health and safety arrangements.
- Provide suitable personal protective equipment if required and ensuring it is kept in good working order. Any contractor shall be responsible for issuing and maintaining their own personal protective equipment.
- Ensure adequate risk assessment of all electrical work activities is undertaken and these are reviewed by a competent person prior to starting of the works.
- Ensure that Method Statements submitted in response to Risk Assessments are appropriate.
- Maintain detailed records of the above (see appendix).

### **\*Competent Person**

Within the context of this document a 'competent person' shall be defined as: -

#### **For advice, guidance or design**

A qualified Electrical Engineer or an Electrical Surveyor within Property Services Group with sufficient experience and expertise to provide the required advice.

An Electrical Engineer is defined as a Member Institution of Engineering and Technology (MIET or TMIET).

#### **For installation or maintenance work**

A Joint Industry Body (JIB) Approved Electrician working as, or employed by, a National Inspection Council for Electrical Installation Contractors (NICEIC) registered contracting business as an Approved Contractor or the Electrical Contractors' Association (ECA).

#### **For specialist inspection and test works (such as portable appliances)**

A person who holds competent person status in relation to clause 7.2 of CP23 or a person working within specific parameters who holds a suitably recognised qualification obtained via a formally certified training course as required by clause 7.3 of CP23 which must be reissued every 3 years.

### **Information and training**

Managers shall provide information, instruction and training for all employees to enable them to discharge their duties without putting their health and safety at risk fully emphasising that **electrical work must only be carried out by competent persons**. If it is found necessary to use in-house technical staff to carry out such work, they will be adequately trained to the level required. If managers have no recognised experience or qualifications in the safe use of electricity, then this information should be sought from a **Competent Person**.

## **Safe system of work**

Most people are aware of the health and safety hazards associated with electricity. To avoid injury, or death, it is essential that managers adopt the following precautions:

### **Faulty equipment**

- Report faulty equipment and remove from service immediately to prevent the continued use of faulty equipment.
- Prohibit the carrying out of all repairs, including the fitting of plugs, unless they are completed by a Competent Person.

### **Portable and transportable electrical equipment**

- Personal issue equipment shall be inspected prior to use by the user and removed from service if any defects are found. Any defects shall be immediately reported to the employees' line manager, with any arising repairs being undertaken by a Competent Person.
- Equipment to be used outdoors shall be 110 volts or less, fed from a centre tapped earth isolation transformer via a 30mA RCD protected supply
- Prohibit the use of extension leads wherever possible. For indoor use ensure that the plug is manufactured to BS 1363 and that the lead is correctly sized for the load. Ensure all electrical equipment in office and educational furniture conforms to BS6396 and BS5733. Daisy chaining of extension leads is strictly prohibited. For external use ensure that industrial plugs to BS EN 60309-2, are used and the supply is derived from an IP rated external supply point that is protected via a 30mA RCD which should be tested and reset before each use. External extension leads should only use either SWA or yellow/orange external grade cable.

### **Temporary installations**

- Any temporary wiring shall be replaced by a permanent installation as soon as practicable and shall always be installed in accordance with the IET wiring regulations and given appropriate certification. All temporary installations shall be inspected and tested every 3 months to ensure that the system is still safe to use, and the tests results retained until the permanent installation is complete.

### **Electrical work - Above 230V AC-single phase and 400V 3 phase AC**

- Prohibit work on equipment or systems above these voltages. Only approved contractors are authorised to carry out this work.

### **Electrical work**

- All work on electrical equipment or systems which involves the exposure of live parts shall be carried out with the supply safely isolated and secured against re-energisation, using a locking device that can only be secured and removed by the competent person carrying out the works.
- All safe isolation procedures shall be carried out in accordance with HSG85 document as a minimum.

### **Live working**

- Live working is not permitted unless all three conditions below are met for live working to be carried out. The conditions are: -
  - a) It is unreasonable in all the circumstances for the conductor to be dead; and

- b) It is reasonable in all circumstances for the person to be at work or near that conductor while it is live; and
- c) Suitable precautions (including, where necessary, the provision of personal protective equipment) have been taken to prevent injury.
- Providing all suitable precautions have been met live working can still only be justified if suitable precautions are taken to prevent injury arising from the hazards identified in the risk assessment. Precautions shall be identified in the risk assessment may include, but are not limited to: -
  - a) The use of robust and properly insulated tools to BS EN60900.
  - b) Avoiding lone live working. Quick action is needed in the event of an electric shock to disconnect the supply and give assistance.
  - c) The erection of safety barriers with warning notices to keep unauthorised people away from the work area.
  - d) The removal of all jewellery, watches etc
  - e) No one working on or providing safety to someone working on live equipment shall have any medical device that may be affected by electricity or magnetic fields.
  - f) The use of specialist test equipment meeting the requirements of GS38.
  - g) Ensuring that adequate clearances are established and maintained when working near live equipment.
  - h) Providing and using correct personal protective equipment (PPE) to reduce the risk of contact with live parts or earth, e.g. insulating gloves, insulating matting.
  - i) Only Competent Persons are authorised to carry out live working.
  - j) Maintaining tools and test equipment in good condition and replacing them if damaged.

Electrical accidents can have very serious consequences and all staff shall be made aware of these three basic rules:

- To report faulty or damaged equipment to their line manager and remove it from service immediately.
- **All** repairs shall be undertaken by a competent person.
- Never to use electrical equipment in damp surroundings or where flammable vapours may be present, unless it is suitable for that purpose after seeking advice from a Competent Person.

### **Record keeping**

Records should be kept of the following:

- Portable and transportable appliances in accordance with Shropshire Councils' Code of Practice CP23.
- Inspections and tests (detailing the appliance/equipment and manufacturers serial numbers, the results of any tests, date tested, name of tester and date of next test plus any details of any modifications or repairs made) (records maintained by Premises Maintenance, registers of the equipment retained by offices, premises, etc.)
- Electrical installation Condition Report complete with a schedule of test results and a schedule of inspections must be retained.
- Personal protective equipment.

- Calibration certificates of instruments and test equipment used for electrical work.
- Matters relevant to personal competence and training in respect of persons who carry out, supervise, manage or assess electrical work.
- Copies of any permits to work issued for work on electrical equipment.
- Contractor's safety information.
- Employee's risk assessments.
- Safety information provided to contractors.

Some of these records are maintained by the Property Services Group section of Shropshire Council, others by departments responsible for staff or equipment.

Please refer to guidance notes in the appendix.

### **The Councils Code of Practice CP23 for the Testing of Portable and transportable Electrical Equipment**

This Code of Practice requires that:

- All directorates will implement this Code of Practice and ensure that portable electrical appliances and equipment will be maintained to be safe for use.
- A register of all such appliances/equipment will be kept, and manufacturer's serial numbers recorded.
- Regular testing and inspection of such items will be arranged.
- The results of tests and inspections will be recorded by directorate.
- The Duty holder is to arrange testing and inspection- via Property Services Group using the frequency dictated in the CP23.
- Any equipment who next inspection due date has lapsed shall not be used and reported to a line manager immediately for arrangement of inspection process.

#### **Assistance**

Any queries on the safety of electrical equipment or installations should be resolved through consultation with the Property Services Group who will arrange for the testing and inspection of electrical appliances and installations.

Contact the Premises Services Group Manager, tel. no. (01743) 253404.

Should there be any doubts in interpreting the requirements of the Electricity at Work Regulations and/or the Code of Practice CP23, the Health & Safety team may be contacted on tel. no. (01743) 252819.

#### **Further information and references**

HSE Website – [www.hse.gov.uk](http://www.hse.gov.uk)

The Health and Safety at Work etc. Act 1974

Electricity at Work Regulations 1989

Further reference HSG85 Electricity at Work – Safe Working Practices, 3<sup>rd</sup> edition 2013.

Provision of Use of Work Equipment Regulations 1992 (as amended)

Workplace (Health, Safety and Welfare) Regulations 1992 (as amended)

The Management of Health and Safety at Work Regulations 1999

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## Appendix

### Electrical Testing of Installations and Equipment – Records

#### Legal:

Regulation 4 of the Electricity at Work Regulations 1989 requires all systems to be constructed and maintained so as to prevent, so far as is reasonably practicable, danger. Guidance then states that the “regular inspection of equipment is an essential part of any preventive maintenance programme”. In summary, regular inspections will help to ensure that:

- any persons occupying the premises are safe (e.g. to prevent electric shock)
- the premises and asset within are protected from risks of heat/fire
- the installation is not damaged or defective.

In terms of the necessary timing of inspections, there are no set limits given in legislation. However, the Institute of Engineering and Technology <https://electrical.theiet.org/> offers guidance on suggested frequencies for various types of properties.

#### Records:

It is important to keep appropriate records of testing. Guidance to the regulations states that “records of maintenance, including test results, preferably kept throughout the working life of an electrical system will enable the condition of the equipment and the effectiveness of maintenance policies to be monitored”.

Those commissioning the inspection should receive on completion an Electrical Installation Condition Report (EICR) along complete with a schedule of test results and a schedule of inspections for it to be valid.

A EICR should contain details of the client, purpose of the inspection and details of the installation that has been inspected such as maximum demand, type of earthing system, etc. It should also detail the installation’s age, any known alterations and date of the previous inspection.

The rest of the form will detail the extent and limitations of the inspection and test along with any recommendations.

The record of the extent and limitations of the inspection is very important and must be agreed with the client or other third party exactly what parts of the installation will be covered by the report and those that will not.

Although guidance gives recommendations for frequency of inspections, the interval until the next test should be determined by the inspector, based upon the outcomes of the inspection that has been completed.

The inspector should also detail any observations, particularly in relation to any works that may be required. There should also be a note as to the overall condition of the installation and whether the inspector believes it to be satisfactory or unsatisfactory.

#### **What is the recommended frequency between inspection and testing?**

The Institute of Engineering and Technology state that for new electrical installations, the initial frequencies for inspection and testing will be recommended by the electrical designer. Subsequent intervals will be recommended by the competent person carrying out the inspection and testing.

The interval shall be determined dependent on the type of installation and equipment, its use and operation, the frequency and quality of maintenance and the external influences, to which it may be subjected. Please refer to:

**IET Guidance Note 3, Inspection and Testing 18<sup>th</sup> Edition, Section 3.7, Table 3.2**

<https://electrical.theiet.org/bs-7671/faqs/inspection-and-testing-faqs/>

Provides some useful information regarding recommended initial frequencies of inspection of electrical installations. It's important to note that these are recommendations and not legal requirements, they are intended for the initial. Please Note that this is a priced publication and currently costs £35.

Please refer to Code of Practice CP23 for guidance on PAT testing records.