



**Footwear and Leather Industries  
Health & Safety  
Committee**

## ***ELECTRICAL SAFETY AND TESTING***

### **INTRODUCTION**

Each year approximately 240 people die as a result of an accident at work. Of these, about 20 are a result of an electric shock. In total, up to 1000 accidents involving electric shocks at work have been recorded in a twelve month period.

The main causes of harm from electricity are:

- contact with a live conductor, which can cause shock or severe burns
- faulty equipment and wiring resulting from poor maintenance, which can start fires
- fire or explosion where electricity is the source of ignition

### **MAIN LEGISLATION**

#### **Health & Safety at Work etc. Act 1974**

Section 2 states that "it shall be the duty of every employer to ensure, so far as is reasonably practicable, the health safety and welfare at work of all his employees".

#### **Management of Health and Safety at Work Regulations 1999**

Regulation 3 requires every employer to make a suitable and sufficient assessment of the risks to the health and safety of his employees whilst at work, and to the health and safety of persons not in his employment who may be affected by his activities.

#### **Electricity at Work Regulations 1989**

Regulation 4 places the responsibility on the employer to maintain all systems, so far as is reasonably practicable, in order to prevent danger.

#### **Institute of Electrical Engineers Wiring Regulations (17<sup>th</sup> edition) 2008 (BS 7671:2008)**

The IEE regulations specify various standards: In order to ensure compliance with the standards, regular testing is required. Although described as regulations, they are non-statutory and only promote best practice.

The above legislation clearly places the responsibility on the employer to maintain a place of work, where his employees are safe from the dangers of electricity, and to ensure that safety by maintaining and testing the electrical systems and equipment under his control.

### **SIX STEPS TO ELECTRICAL SAFETY**

1. Perform a risk assessment to identify the hazards, the risks arising from those hazards, and the control measures you should use.
2. Check that the electrical equipment is suitable for the work and way in which it is going to be used.
3. Check that the electrical equipment is in good condition.
4. Check that the equipment is suitable for the electrical supply with which it is going to be used, and the electrical supply is safe. Consider the use of Residual Current Devices for extra protection.
5. Make sure that the user of the equipment is trained to use it safely and can keep others safe.
6. Make sure the user knows which personal protective equipment to wear, how to use it, and make sure they do.

## **PORTABLE APPLIANCE TESTING** (Often referred to as PAT testing)

The IEE Code of Practice defines a portable appliance as one of less than 18kg in mass that is intended to be moved whilst in operation, or an appliance which can easily be moved from one place to another.

The following points should be noted with regard to most portable appliances:

- All equipment should be well maintained
- Daily or regular visual checks should be carried out by the operator before using equipment
- A formal visual check and inspection should be carried out initially and then every six months
- A full test is recommended annually, to be carried out by a competent person with calibrated testing equipment. This comprises a visual inspection, insulation resistance and load and leakage testing
- A list must be produced of all equipment requiring testing
- Individual items must be tested and the results recorded

Certain equipment cannot undergo some of the testing procedure (eg: Desktop or Laptop computers, photocopiers etc), in which case only the electric plug or lead may be tested. Consequently, a formal visual inspection of the equipment need only take place every 1 to 2 years, but a daily visual test of the plug and lead should still be carried out, the formal visual test need only be an annual event and the full testing every two years.

Further information on testing intervals may be found on the HSE website ([www.hse.gov.uk/electricity](http://www.hse.gov.uk/electricity))

## **INSTALLATION TESTING**

Electrical installations should be tested often enough that there is little chance of deterioration leading to danger. Testing must be carried out in order to comply with the IEE Wiring Regulations and must be done by a competent electrician who is either an approved electrical contractor or a member of an electrical contractors association.

The recommended intervals are:

- Premises open to the public (including shopping centres) – Annually
- Industrial premises (Footwear & Leather manufacture: machinery manufacture) – 3 years
- Commercial premises (Warehouses; Retail premises; Offices) – 5 years
- Domestic premises – 10 years

In order to spread the cost of testing a whole installation, it may be carried out on a staggered basis, but the minimum requirement is 20% per annum.

The test comprises:

- Visual checks on cables, equipment and fittings and where practical to rectify defects
- Electrical and earthing tests
- Insulation resistance testing

It should be noted that permanently wired machines are classed as part of the installation and do not require separate tests.

## **EMPLOYEES AND SAFETY REPRESENTATIVES**

Consulting with trade union appointed safety representatives or other employee representatives is a legal requirement. Working with safety representatives and employees' representatives is a useful means of communicating on health and safety matters in the workplace.

### **FLIHSC**

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