

The Legal Obligations of Employers to Maintain all Electrical Installations in a Safe Condition



Issued in the interests of safety by



Representing the best in electrical
engineering and building services

The Legal Obligations of Employers to Maintain all Electrical Installations in a Safe Condition

Electricity is the most versatile and convenient source of energy known to man.

However, it can be potentially dangerous if the system has not been properly designed, installed, operated and maintained.

Invariably electrical installations are modified and extended over time to serve additional equipment and requirements. Frequently these additions were not anticipated in the original design and may affect the integrity of the installation.

In addition, electrical installation equipment can deteriorate in time because of unforeseen adverse environmental conditions.

Therefore it is essential that all electrical installations are inspected, tested and properly maintained in order that they may operate safely.

This leaflet is intended to help employers understand the requirements and implications of the legislation and to assist them to meet the obligations which such legislation imposes upon them.

THE LAW

The Electricity at Work Regulations (EAW) 1989, made under the Health and Safety at Work Act 1974, came into force on April 1st 1990. These regulations require all electrical installations in work places to be designed, constructed and maintained in such a manner as to be safe to use at all times.

How can Employers comply with the Law?

The Health and Safety Executive booklet "The Memorandum of Guidance on the EAW Regulations" suggests that in order to comply with the law the condition of the electrical systems should be monitored by regular inspection and testing, and records of the test results should be maintained.

Why is it necessary to inspect and test installations?

Inspection and testing is necessary to identify any damage to, or defects in, an installation which may give rise to danger, so as to ensure the safety of persons and livestock from the effects of electric shock and burns, and property from the effects of fire and heat, arising from a defective electrical installation. In other words, to ensure that it is SAFE TO USE.

Who is responsible?

EAW Regulation 3

It is the responsibility of the employer and in some instances a self employed person, to ensure that electrical systems are safe. Employees have a duty to co-operate with the employer in this respect. "Employer" in this sense includes those persons charged with the management of the work place.

What premises do the regulations cover?

All premises and places where people work, for example: Public buildings - schools hospitals, sports and leisure centres, museums, cinemas, theatres, football, cricket and athletic grounds; Residential - residential homes for the elderly, hotels and guest houses; Industrial - factories, farms and construction sites; Commercial - offices, shops and warehouses.

Who should carry out inspection and testing of electrical installations?

EAW Regulation 16.

IEE Wiring Regulations

Inspection and Testing shall be carried out by competent persons who shall have sufficient technical knowledge and experience appropriate to the type of installation, and an understanding of the test methods and requirements in order to prevent danger or injury. Since the person must make judgements on the appropriate levels and frequency of testing required, he must have an understanding of the use of the premises concerned, the operating environment and any relevant safety standards or licensing requirements that may be applicable to the premises. The correct instruments must also be used.

How frequently should electrical installations be periodically inspected and tested?

Public buildings, sports and leisure facilities - every year, or as required by the Local Authority conditions of licence; Industrial and agricultural - 3 years; Commercial, educational and residential (not domestic) - 5 years; Construction sites - 3 months, or as frequent as the testing engineer considers necessary according to the exposure of the installation to deterioration or damage.

What needs to be inspected?

The inspection should comprise a careful scrutiny of the installation to ascertain if there has been any deterioration or damage to the installed equipment, or if there are any installation defects that may give rise to danger. Cables, trunking and conduits, switchgear, distribution boards and protective devices, equipment, lighting fittings and accessories, all need inspecting for deterioration; due to age, the working environment, or the affects of heat generated by overloading or loose connections, and for electrical and mechanical damage.

What needs testing?

EARTHING: The earthing arrangements to ensure that the installation and all metal parts are adequately connected to earth and that all devices for protection will operate within prescribed times when a fault occurs.

POLARITY: to ensure that the cables and equipment are not live when switches are in the off position.

INSULATION: The resistance of the insulation of cables and equipment to ensure that there are no dangerous leakage currents which may be the cause of a fire or a circuit failure.

RCDs: Residual current devices need to have specific tests applied to them to ensure that they will operate and disconnect the circuit within the specified time when required to do so. these devices are installed as supplementary protection against electric shock if a person should touch a live cable or metal that is live because of a fault.

Important note: It is essential that RCDs are "tested" frequently by the user of the installation so as to ensure that the operating mechanism will move freely and rapidly when required.

How should test results be documented? EAW Regulation 4(2)

It is advisable to have a test results schedule for every distribution board and control panel. The schedule should record information about the supply to the distribution board as well as details of the final circuits. Earth Loop Impedance and Insulation Resistance values should be recorded for every circuit. The test records should be retained for comparison with future test results.

What about a certificate of safety?

There is no requirement for certification but BS7671; 2008 Requirements for Electrical Installations, IEE Wiring Regulations 17th Edition require a "Report to be given by the person carrying out the Inspection and Testing, to the person ordering the work". The report should contain a list of any damage to and defects in the

installation, and noncompliance with the Regulations, which may give rise to danger. The report should also detail the limitations of the Inspection and Testing.

Where can I get further information?

The answers given above are intended for guidance only and you are strongly advised to refer to the relevant legislation and safety standards to assess your obligations.

For more information, the following publications are particularly recommended:

The Health and Safety at Work Act of 1974

HSE Guidance Note HS(R)25 - Memorandum of Guidance on the Electricity at Work Regulations 1989

HSE Books, PO Box 1999, Sudbury, Suffolk CO10 6FS. Tel: 01787 881165 www.hsebook.co.uk

BS7671 2008 Requirements for Electrical Installations, IEE Wiring Regulations 17th Edition.

Inspection and Testing Guidance Notes 3.

Contact: The Institution of Engineering and Technology, Michael Faraday House, Six Hills Way, Stevenage, Herts SG1 2AY. www.theiet.org

How can ECA members help?

The Regulations are very complex and imply that the testing programme from the initial assessment of procedures through to the final report is carried out by technically competent and experienced people.

ECA members are capable of carrying out this work for you and thus help you to comply with the EAW Regulations. They will be willing to discuss your installations and advise you of the procedures you should adopt. A copy of the register of ECA members is available on request.

ECA members offer a recognised Inspection and Testing Contract and a Maintenance contract which have been registered with the office of Fair Trading. They can also offer and advise on a planned maintenance programme to ensure the efficiency and safety of all electrical systems and equipment.

The Premier Association of Electrical Installation Engineers

The Electrical Contractor's Association represents the interests of companies in England, Wales and Northern Ireland designing and installing the electrical engineering services needed in homes, schools, hospitals, factories, industrial plant and commercial premises. These installations include traditional power and lighting outlets together with complex high technology control, security and data communications system for automated offices, industrial plant and environmental services. The ECA was founded in 1901. It has over 3,000 member firms which range from local employers with only a few operatives to national multiservice companies with many branches employing thousands - many operating worldwide. ECA members have a collective annual turnover in excess of £3 billions which represents 80% of all the electrical installation engineering work undertaken in England, Wales and Ireland. Its members employ over 30,000 operatives and support 8,000 apprentices in their craft training.

ECA Ensuring Installation Safety and Customer Satisfaction

The aim of the ECA is to ensure that electrical installation work is undertaken by qualified people to high standards of quality and safety and to terms which are equitable to the client and installer. This relates to the technical and commercial abilities of the contractor. Members of the ECA must have been operating successfully for at least one year before joining the Association. In addition:

- Potential members are inspected and assessed to ensure that they operate sound business practices.
- The installation work of a potential member is inspected rigorously to ensure technical compliance with relevant national standards across all aspects - design, procedures, installation, inspection, test and documentation.

Subsequently members are inspected on a regular basis as part of the ECA's Periodic Technical Assessment Scheme to ensure that satisfactory standards are maintained.

- For work falling within its scope all members work to BS 7671: 2008 Requirements for Electrical Installations (The Institution of Electrical Engineers (IEE) Wiring Regulations).
- All members employ qualified electricians, registered with the Joint Industry Board for the Electrical Contracting Industry (JIB).
- All members work to a published Code of Fair Trading duly registered with the UK Office of Fair Trading to ensure an equitable exchange with their clients. Copies of the Code are available on request for Members of the Association.

ECA Guarantee

The ECA Guarantee of Work Scheme replaced the ECA Warranty Scheme, on 1 January 2009. The Warranty, where used, will continue to cover contracts signed before 1 January 2009 in accordance with scheme's terms and conditions.

The Guarantee of Work Scheme guarantees to customers of ECA members that subject to terms and conditions, electrical installation work failing to comply with relevant British Standards will be rectified. Products and materials selected by the member must conform to relevant Sale of Goods Legislation.

The Guarantee is compliant with TrustMark and Part P of the Building Regulations. It is effective for claims notified within six years of completion of the work and is subject to a maximum limit of £50,000 (including VAT) and £100,000 (including VAT) for multiple contracts for the same customer in any one year.

ECA Bond

The ECA Bond, which is underwritten by an insurer provides the following cover: The Bond, subject to the terms and conditions of the scheme, provides the Claimant with an assurance that if the member's employment is determined for a Specified Reason, such as the insolvency of the member, the additional cost of completion will be met by the Insurer to a maximum limit of £50,000 or 10% of the members contract value shown on its certificate. The benefits of the Bond are available to all clients on all contracts using 'Approved Forms'.

Certificates

Certificates are issued to each ECA member company and the contract specifier or client is recommended to request copies from the contractor to verify their validity in support of the ECA Guarantee and ECA Bond schemes.

ECA Supporting and Encouraging Professionalism in the Industry

The ECA strives to help its members provide their customers with the best possible service.

It maintains permanent service departments which provide qualified assistance, information and advice on employee relations, technical, commercial and legal matters.

In addition it operates over 50 business training courses to keep its members updated on new practices and technologies. These include courses on inspection and Test, and Portable Appliance Testing.

A network of ECA Regional Offices maintains an efficient local contact structure much appreciated by clients and members alike.



Representing the best in electrical engineering and building services



IWEC International Ltd.

Glangwendraeth Farm
Priory Street
Kidwelly
SA17 4TY

Web: www.iwecelectrical.co.uk
Email: enquiries@iwecelectrical.co.uk
Phone: 01554 707070



Representing the best in electrical
engineering and building services

Electrical Contractors' Association
ESCA House, 34 Palace Court, London, W2 4HY
Tel 020 7313 4800 Fax 020 7221 7344
Email info@eca.co.uk www.eca.co.uk