
ECA
Excellence in Electrotechnical
& Engineering Services
The Employer's Legal Duties
to maintain
Safe Electrical Installations

Electricity is a hugely versatile and convenient source of energy, but it can be dangerous if the electrical system has not been properly designed, installed, operated and maintained. This guide aims to help employers* understand their legal duties to ensure adequate inspection, testing and maintenance of electrical systems.

*Employers include building and other premises owners, landlords or managing agents.

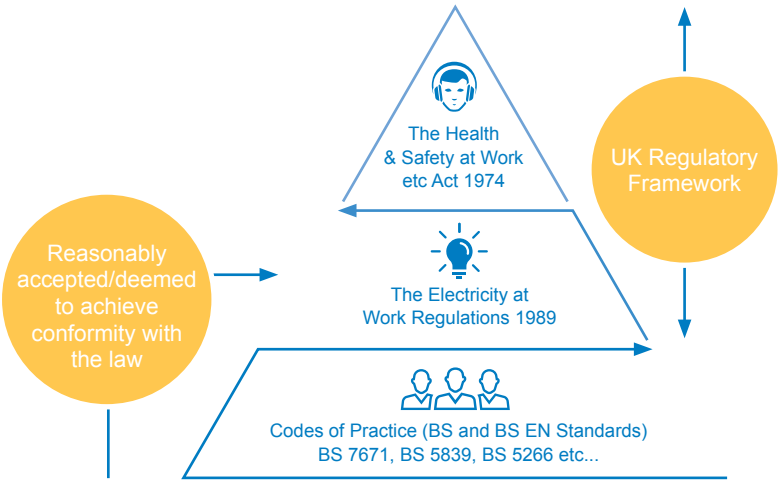
Electrical installations need to be inspected, tested and properly maintained so that they continue to operate safely.

Many installations are modified and extended over time, to serve additional equipment and meet new user requirements. Some of these additions may not have been anticipated in the original design, and the changes can seriously affect the integrity of the installation. In addition, electrical equipment can deteriorate due to physical damage or environmental factors.

Employers and the law

The Electricity at Work Regulations 1989 (EAW) is an important set of Regulations made under The Health and Safety at Work Act 1974 (HSW Act). The HSW Act puts wide-ranging duties on employers to protect the 'health, safety and welfare' at work of all their employees, as well as others on their premises, including temporary staff, the self-employed, clients, visitors and the general public.

The EAW specifically applies this duty to ensuring the safety of electrical systems. It requires all electrical installations to be designed, constructed and maintained so that they are safe to use at all times.



Penalties for non-compliance

Non-compliance with the HSW Act or the EAW, notably in the case of accidents involving harm or serious loss, can lead to *very significant fines*, and may also result in civil action.

How can employers comply?

The Health and Safety Executive's Memorandum of Guidance on the EAW Regulations states that to help an employer comply with the requirements of the EAW, the condition of electrical systems should be monitored by regular inspection and testing, and there should be suitable records of the test results. This activity, and any changes to the system itself, should be carried out by someone who has the necessary skills, knowledge and experience to do the job properly.

Why is it necessary to inspect and test electrical installations?

Inspection and testing is essential in order to identify whether an electrical installation has any damage or defects that may give rise to danger to people (from electric shock, or fire or explosion) or to property (from fire, explosion or heat damage). In other words, inspection and testing helps to ensure that an electrical system is 'SAFE IN SITU' and SAFE TO USE.

Who is responsible?

Regulation 3 of the EAW states it is the responsibility of the employer to ensure that electrical systems are safe, and employees have a duty to co-operate with the employer to ensure safety. "Employer" includes those who manage a workplace.

What premises does EAW cover?

The EAW covers all premises and places where people work e.g.

- Public buildings – such as schools, hospitals, sports and leisure centres, museums, cinemas, theatres, sports grounds;
- Industrial – such as factories, warehouses, farms and construction sites;
- Commercial – offices, shops and warehouses;
- Certain types of residential – such as residential homes for the elderly, hotels and guest houses.

Who should carry out inspection and testing of electrical installations?

Regulation 16 of EAW and the BS 7671 Requirements for Electrical Installations (IET Wiring Regulations) state that inspection and testing should be carried out by someone who has sufficient technical *knowledge, skills and experience* for the type of installation in question. They will also need to select, and understand how to use, the correct instruments, as well as understanding the test methods and other requirements that help to prevent danger.

Anyone recommending the frequency of subsequent inspection and testing should also have the necessary knowledge, skills and experience, taking into account:

- the electrical equipment involved;
- the use of the premises and the operating environment; and
- the safety standards or licensing requirements that may be applicable to the premises.

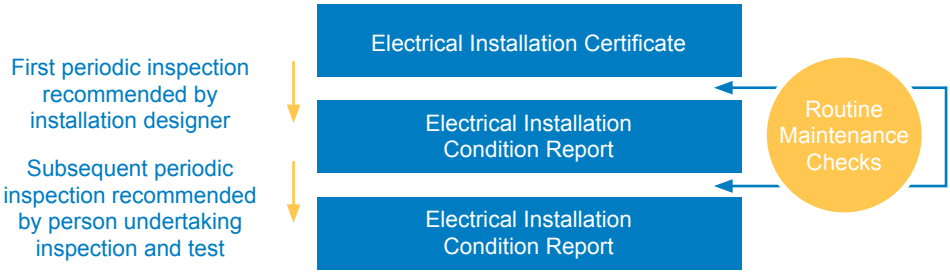
How frequently should electrical installations be inspected and tested?

Typical periods between inspection and testing from when the installation is first put into service are:

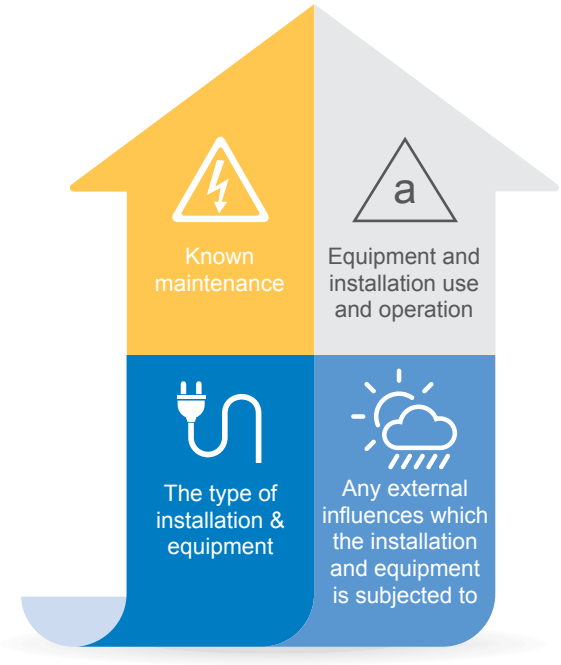
- three years for industrial, agricultural and public buildings, sports and leisure facilities, or as required by a local authority conditions of licence; and
- five years for commercial, educational and certain residential premises (not domestic).

However, inspections will often be more frequent than this. A competent person carrying out subsequent inspections may recommend that the interval between future inspections is increased (or decreased) as a result of their inspection.

Building your evidence of electrical maintenance...



All documentation associated with the electrical installation should be kept safely and be available as evidence of ongoing maintenance.



Factors that help to determine recommended intervals between periodic inspections and tests.

What needs to be inspected?

Electrical equipment, including cables, trunking and conduits, switchgear, distribution boards and protective devices, light fittings, energy sources and batteries, needs careful inspection for any:

- departures from British Standards that may give rise to danger;
- damage or deterioration due to age, exposure to the working environment or due to heat generated by overloading;
- loose connections; or
- other mechanical failure or damage.

What needs testing?

- EARTHING AND BONDING: 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: Testing the resistance of the insulation of cables and equipment to ensure there are no dangerous leakage currents which may cause a fire or a circuit failure.
- RCDs: Residual current devices need specific tests to ensure that they will operate and disconnect the circuit within the specified time, when needed. These devices are installed as additional protection against electric shock, should a person 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, to ensure that the operating mechanism will move freely and rapidly when needed.

How should test results be documented?

A test results schedule is recommended for every distribution board and control panel. This schedule should record information about the supply to the distribution board, as well as details of the final circuits. Earth fault 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?

IET Wiring Regulations require an Electrical Installation Condition Report (EICR) to be given by the person carrying out the inspection and testing, to the person ordering the work (e.g. the employer). The report should contain a list of any damage to, or defects in, the installation, and any non-compliance with the EAW or the IET Wiring Regulations which may give rise to danger. The report should also detail any limitations of the inspection and testing, as agreed between the employer and the competent person.

Where can I get further information?

To fully understand your duties and obligations, under the EAW, you are advised to refer to:

- HSE Guidance Note (HSR25) - Electricity at Work Regulations 1989 www.hse.gov.uk/pubns/books/hsr25.htm
- IET Guidance Note 3 - Inspection & Testing. https://electrical-shop.theiet.org/books/guidance-notes
- BS 7671 Requirements for Electrical Installations, IET Wiring Regulations https://electrical.theiet.org/bs-7671 (18th Edition)

Technical Compliance Certificate

Technical Certificates are issued to each ECA member company, identifying the scope of work they are recognised for within the ECA. You may request a copy of the Technical Certificate from the contractor to verify that they have been technically assessed to carry out the work you need, and that you can benefit from the ECA Warranty and Bond Assurance Schemes.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Technical Compliance Certificate

This is to certify that

Has met the requirements of the Electrical Contractors' Association Membership Assessment Scheme by satisfactorily demonstrating compliance with relevant technical standards in the following categories of work:

and associated Quality Management

This certificate is subject to a periodic review in accordance with the Scheme undertaken on behalf of the Electrical Contractors' Association which is the representative body for the electrotechnical and building engineering services industry in England, Wales and Northern Ireland.

Valid until

Steve Martin
Acting Head of Technical

by the Electrical Contractors' Association, ECA Court, 24-26 South Park, Sevenoaks, TN13 1DU
Tel: 020 7313 4800 Email: info@eca.co.uk www.eca.co.uk

This certificate should be presented with the ECA Membership Certificate

About the ECA and its members

ECA is the UK's largest trade association representing electrical, electrotechnical and other engineering contractors at regional, national and European level. ECA member-companies are rigorously assessed before membership is approved.

Members carry out a combined turnover in excess of £6 billion annually. Member firms carry out design, installation, inspection, testing, maintenance and monitoring activity across the domestic, public, industrial and commercial sectors.

This ranges from power and lighting to data communications, to energy efficiency and renewables, as well as the design and installation of cutting-edge building control technologies.

ECA's near 3,000 members range from SME electrical firms to nationwide engineering contractors and building services firms that employ thousands of professionals on major UK projects. ECA members also support over 5,000 apprentices annually.

ECA members are technically assessed for conformity with industry safety and quality standards, and to ensure that they use workers who have suitable skills, knowledge and experience for the activity in question.

ECA members can help you to:

- decide what you need to do to comply with the law;
- help you to design and operate an effective testing and inspection regime; and
- plan maintenance programmes to help ensure the efficiency and safety of all your electrical systems and equipment

This will all help reduce the risk to your organisation.

Members can also offer inspection, testing and maintenance contracts to suit your needs.

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To find an ECA member visit:
www.eca.co.uk

Ensuring installation safety and customer satisfaction

A key ECA aim is to ensure that electrical installations are undertaken by competent people, to high standards of quality and safety.

The installation work of potential members is inspected rigorously to ensure technical compliance with relevant national standards across all aspects - design, installation, inspection, testing, maintenance and monitoring. Members are then inspected on a regular basis to ensure that standards are maintained.

ECA maintains dedicated service teams which provide qualified assistance and information on:

- technical;
- health and safety;
- employee relations; and
- commercial and legal matters.

In addition it operates regular seminars and CPD workshops to keep members up to date on good and best practice and new technologies. A network of ECA regional offices maintains an efficient local contact structure, which is highly valued by clients and members alike.

All ECA members also adhere to a Code of Fair Trading - copies of the Code are available via: www.eca.co.uk.

ECA
CONSULTANT & SPECIFIER ASSOCIATE

If your organisation is a specifier or consultant, you may be interested in finding out more about ECA's Consultant & Specifier Associate category.

Consultant & Specifier Associates have direct access to ECA information and guidance on testing, inspection and maintenance, and a range of additional benefits.
See www.eca.co.uk/client for more details.

ECA Assurance Schemes

ECA aims to ensure that the work of all its Registered Members meets the highest standards, is undertaken by suitably qualified people, and is delivered on terms that are fair to both customer and installer.

As a result, ECA provides members with a number of assurance schemes that help to give their customers both security and peace of mind when entering into contracts.

Firstly, ECA guarantees the quality of members' work in the UK, by ensuring that any contract worth under £50,000, which does not meet the appropriate standards, will be suitably rectified*.

An insurance-backed warranty is available for increased contract values.

ECA also provides a bond, which ensures, under prescribed circumstances (e.g. insolvency), that the work will be completed to appropriate regulations and standards.

*Terms and conditions apply, and an introductory leaflet to these schemes can be found on the ECA website: www.eca.co.uk

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ECA and the electrotechnical industry

Founded in 1901, and still shaping the future, ECA is the UK's leading trade association that represents and supports businesses involved in all aspects of electrotechnical design, installation, inspection, testing, maintenance and monitoring.

ECA has nearly 3,000 member businesses, ranging from SMEs to nationwide larger contracting businesses, together generating an annual electrotechnical turnover of well over £6 billion.

www.eca.co.uk
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