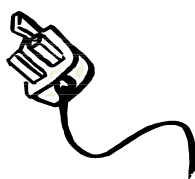


The Electrical Equipment (Safety) Regulations

A Guide for Manufacturers and Importers



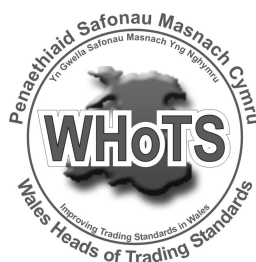
These Regulations came fully into effect on 1st January 1997 and most electrical products are subject to their requirements. The Regulations implement a European Directive on electrical safety - The Low Voltage Directive, commonly referred to as the "LVD". The LVD reflects the provisions of the European "new approach" Directives. The intention of these directives is to harmonise laws in the European Union and assist European Community trade.

The Regulations affect all traders who supply relevant electrical equipment, but the main requirements are aimed at manufacturers and importers of electrical equipment.

This guide has been prepared to assist manufacturers and importers meet the requirements of the Electrical Equipment (Safety) Regulations. It is not an exhaustive document, but it does try to cover most aspects of the Regulations. In particular advice is given on:-

- the essential safety requirements;
- demonstrating compliance;
- CE marking;
- necessary documentation

The advice contained in this leaflet is based on the best information currently available. Every effort has been made to ensure the accuracy of this guide, but you are advised to seek more detailed advice before applying a CE mark to your product.



This is one of a series of leaflets prepared by the Wales Heads of Trading Standards Group. For details of other leaflets in the series, please contact your local Trading Standards Department - contact details are provided at the end of this leaflet.

Introduction

The 1994 Regulations apply to all electrical equipment designed or adapted for use at between 50 and 1000 volts alternating current or 75 and 1500 volts direct current. The Regulations cover domestic electrical equipment and equipment used in the workplace. Products subject to the Regulations include washing machines, televisions, fans, kitchen appliances, power tools, etc.

The regulations affect all suppliers of electrical equipment, but this guide focuses on the duties placed upon manufacturers and importers. In common with the other new approach directives, manufacturers must ensure that their product complies with a number of rules. Products subject to the Regulations must:-

- satisfy essential safety requirements;
- be CE marked (this is a visible declaration by the manufacturer that the product meets the requirements of the Regulations);
- be subject to a declaration of conformity (a written declaration stating compliance with the requirements of the regulations);
- be easily related to relevant technical data (this provides the means of assessing the conformity of the equipment to the requirements of the Regulations).

On the face of it, these seem to be a simple set of rules, but the considerations that manufacturers must take on board vary across the different trade sectors. This guide now outlines the core elements listed above in more detail.

The Essential Safety Requirements

The essential safety requirements are defined in the Regulations. These require products to be built in such a way that electrical equipment is:

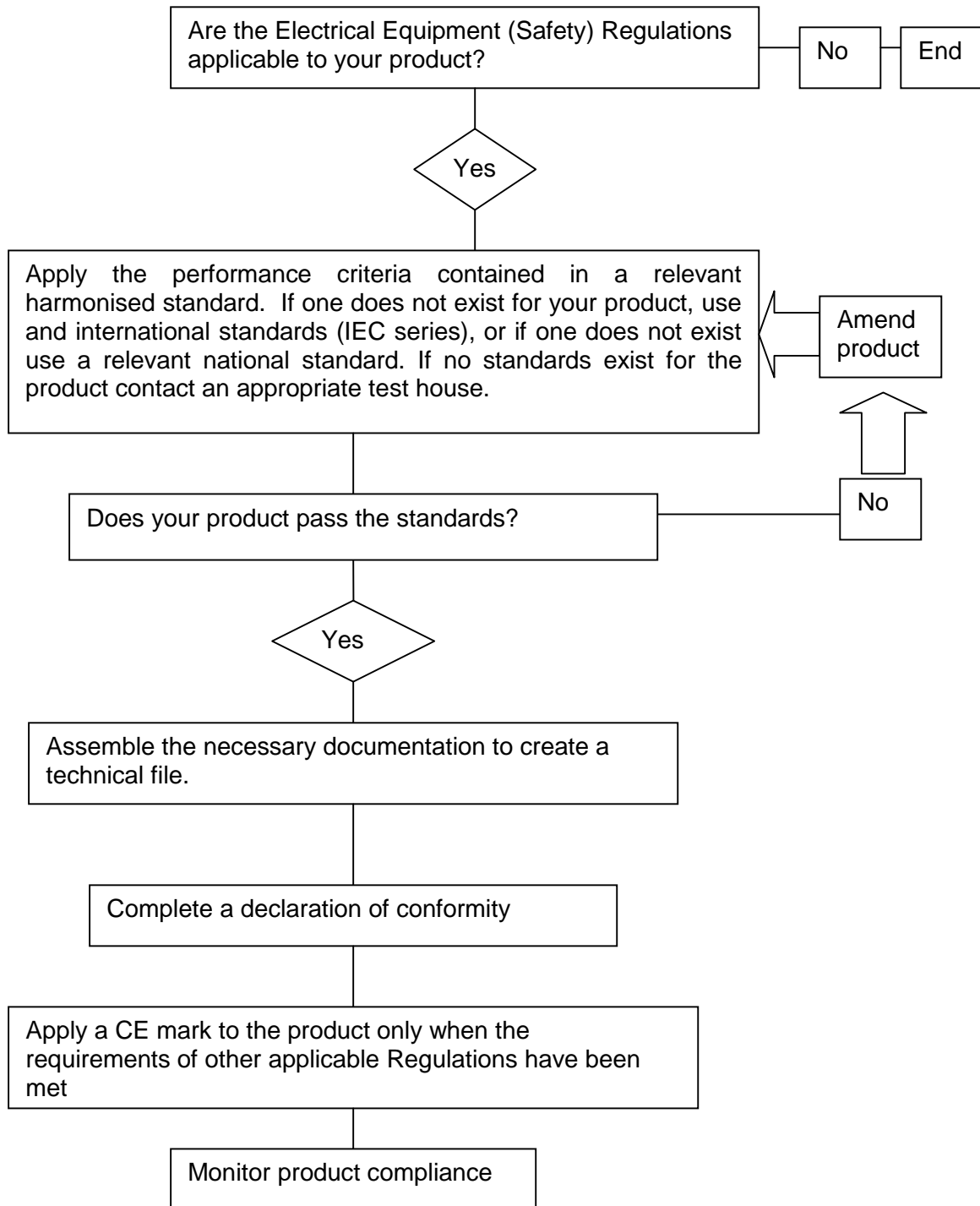
- **Safe**
Any risk of personal injury, arising from the use of electrical equipment, must be reduced to a minimum. Equipment must, therefore, not present any electrical hazards or have any physical dimensions that would cause injury, e.g. entrapment, sharp edges.
- **Constructed in accordance with good engineering practice**
Equipment is deemed to meet this requirement if it complies with a published standard, e.g. EN60950, the harmonised standard for IT equipment, or any other relevant product standard.
- **Designed to meet the safety requirements contained in the Regulations**
These requirements are listed in full in the Regulations and cover issues like marking, protection against electric shock, earthing and supply overload.

The technical aspects of electrical safety are extremely important, and if you have any doubts, there are testing houses that can assist you in this area. It is vital that you seek technical help at the design stage, it could save you a lot of money on things like product recall, product modifications, etc. Manufacturers must determine how they will meet the

essential safety requirements and then demonstrate compliance. Simply assembling CE marked components and relying on other manufacturers is not sufficient.

Meeting the Essential Safety Requirements

The diagram given below is a simple representation of the process manufacturers must go through to meet the requirements of the Electrical Equipment (Safety) Regulations. This is known as the attestation process; the means of proving how and why you believe your product to be compliant.



The basic premise behind the essential safety requirements is that electrical equipment must operate safely under both normal and fault conditions. Some of the requirements listed in the Regulations relate to:

- Protection against electric shock
- Protection against fire hazards
- Mechanical hazards
- Excessive rises in operating temperatures
- Energy hazards

Understanding these basic safety principles is vital if a product is to meet the essential requirements, but while these principles are common to all electrical equipment, the performance requirements will vary for different products. These different performance requirements are determined by assessing the environment the product will be used in and the type of work it will do.

The easiest way for a manufacturer to meet these requirements is by using a published performance standard. The regulations set a hierarchy for standards, with harmonised European standards having precedence over international and national standards. A harmonised standard is one that has been agreed by the European Commission. By meeting its requirements, you will have a high degree of confidence that your product is safe, providing the standard covers all aspects of the safety of the product.

Examples of such standards include:

- EN60950 Safety of IT equipment
- EN60335 Safety of household appliances
- EN50144 Safety of hand held power tools

If your product is new or innovative and no standards exist to measure it against, then you must take advice from a notified body (an organisation approved by the Government to give expert advice) to ensure you meet the requirement for good engineering practice and safety.

At this stage, the question of testing should be considered.

There is no statutory requirement to test your equipment. However Regulation 11 requires manufacturers to ensure that their production process is under control and produces equipment that continually meets the safety requirements. It is difficult to envisage how this requirement can be satisfied without some form of examination or testing. Such a process can be done in-house, if facilities exist, but accurate records must be kept to demonstrate compliance. Satisfying the statutory defence in the event of a non-compliant product may prove difficult without such a process.

Documentation

The next stage is the paperwork. Only when all the relevant paperwork, relating to all the relevant regulations, has been assembled should the manufacturer affix the CE mark.

The Regulations require a manufacturer to create and sign a Declaration of Conformity for each type of product and its variants. The example given below outlines the content of such a declaration. It should be in English and must be signed by a representative of the manufacturer. This might be a director of the company. In the event of a false declaration being made, action may be taken against the person who has signed the declaration as well as the manufacturer.

Example of a Declaration of Conformity

Company Name/Address etc.

.....
.....
.....

This is to certify that

Product category

Model name

Conforms with the essential requirements of the European Directive 73/23/EEC, as implemented by the Electrical Equipment (Safety) Regulations 1994, by application of the following standards

State which used, e.g. EN60590:1992

Signed:

Position:

Date:

The Regulations require manufacturers to keep a technical file. This is a set of documents containing information on the following:

- a description of the equipment;
- drawings or photographs of the equipment;
- technical drawings;
- a list of the standards applied to the product;
- results of design calculations made, examinations carried out, etc.;
- test reports;
- instructions for use.

It provides you with evidence to demonstrate that your product meets the requirements of the appropriate regulations. It should, therefore, cover the design, manufacture and operation of the equipment.

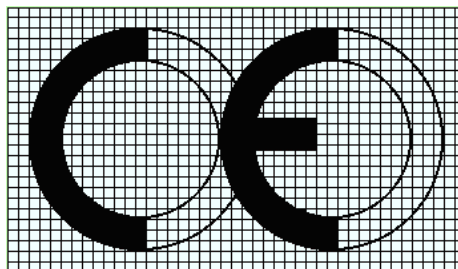
Applying the CE mark

Even the simple process of applying a CE mark can be problematic. The application of the CE mark by the manufacturer is taken as a claim that the product satisfies all of the relevant directives. You must be aware of any other European Directives that apply to your product and meet their requirements **before** applying the CE mark.

The regulations state that the CE mark should be affixed to one of the following:

- the apparatus itself, or where that is not possible or impractical;
- the packaging for the product; or
- the instructions for use; or
- the guarantee certificate.

You are advised to place the CE mark on the product and its outer packaging wherever possible. The CE mark must be at least 5mm high and in the font style given in the Regulations.



And don't forget

In the UK, suppliers of electrical equipment must ensure that domestic electrical equipment meets the requirements of the Plugs and Sockets Etc. (Safety) Regulations 1994. These Regulations require domestic equipment to be fitted with a correctly fused plug and where appropriate, user instructions should be supplied. For information on these regulations contact Trading Standards at the address given below.

You should also consider the Electricity at Work Regulations 1989, which cover the use of electrical equipment in the workplace. For information on these regulations you should contact the Health and Safety Executive on 029 2026 3000.

Where can I get more information?

- The Trading Standards Service of your local authority should be able to help with most of your queries. You can contact your local Trading Standards at:-



Trading Standards

Torfaen County Borough Council
County Hall
Cwmbran NP44 2WN
trading.standards@torfaen.gov.uk
tel: 01633 648384

- The Dti

The Standards and Technical Regulations Directorate are the lead body within the UK for most of the CE marking directives (but not all). The Dti produce a number of in-depth guidance notes on the various regulations, most of which can be obtained from your Local Trading Standards department. Alternatively you can contact the Dti directly on 0207 215 5000 or by writing to 151 Buckingham Palace Road, London, SW1W 9SS.