

## What is Product Safety Testing?

Product safety is the ability of a product to be safe for intended use, as determined when evaluated against a set of established rules.

### Why is it necessary?

It is unlikely that anyone would deliberately place an unsafe product on the market, but what is meant by safe?



The legislation sets out clear test and documentary requirements that manufacturers and distributors placing equipment on the European market, must follow to demonstrate that their products meet defined safety criteria and are safe for intended use. Evidence that the prescribed legislation has been conformed with can be demanded by the enforcement authorities (Trading Standards, HSE etc.), within strict timeframes (normally 48 hours).

### What are the legalities?

In the UK and Europe, the Electrical Equipment (Safety) Regulations and Low Voltage Directive (LVD) 2014/35/EU applies to the majority of electrical equipment in use at home, the office or industry. The LVD / Electrical Equipment (Safety) Regulations require that electrical equipment can only be placed on the market if it does not endanger the safety of persons, property, or domestic animals.

The LVD / Electrical Equipment (Safety) Regulations are applicable, with a few exceptions, to any electrical equipment designed for use with a voltage rating of between 50 and 1000 V for alternating current (A.C.) and between 75 and 1500 V for direct current (D.C). In the UK, this European law is implemented by Statutory Instrument 3260 (SI 3260).

The CE Mark is a mandatory symbol of compliance with all relevant directives (unless in transition) Therefore, if your product operates within the specified voltage range then conformance with the LVD is likely to be required.

Finally, it must be understood that the LVD is a “test” directive and that it is a requirement that a safety test report is included in the Technical File (see How can we help section).

### Reducing the risk?

The best way to minimise the risk of not meeting the LVD is to ensure that at the design stage the product development takes account of any relevant harmonised safety standards and the Principal Safety Objectives of the Directive. It is also prudent for it to have an independent Safety Assessment conducted at prototype stage to check the design is likely to meet the requirements before committing to volume manufacture. Importers can also find Safety Assessment a very useful tool in helping to establish the accuracy or otherwise of test reports from outside of the EU.

### Choosing suitable components

Choosing appropriate components at the design stage helps reduce costs and meet the requirements of harmonised standards under the low voltage directive.

### What are safety critical components?

Safety critical components are but not limited to – Power supplies, transformers, X-caps, Y-Caps, resistors bridging insulation, optocouplers, surge suppression devices, line filters, line switches, mains inlets/ outlets, fuses, thermal cut-outs, safety interlocks, mains lead etc.

These are components, the failure of which will result in a hazard.

### What are approved components?

Approved components are those components that have independently evaluated to comply with the requirements of a relevant standard by a recognised third-party test laboratory (an accredited body of some form).

## Why do safety critical components need to be approved?

Use of an approved component ensures that component performs its required function reliably. Use of a pre-approved component helps in ensuring the compliance of your product. It also means less work at testing stage. For certain third-party assessments / certifications use of pre-approved components is an absolute must. If components are not approved, then that may substantially increase the test time and therefore the cost of your overall product.

## How to ensure safety critical components are approved?

Generally, components carrying some form of third-party certification marks are acceptable. For example: VDE, ENEC, TUV, FI etc. These components will carry some form of reference to test certificate or test report. However, it is advised to obtain copy of test certificate and report for your technical file. This approval information must be reviewed to ensure that the parameters of approval are suitable for your application.

Care should also be taken to ensure that component is approved to appropriate standard.

## Are CE marked components acceptable?

All products sold in the EU must be CE marked. CE mark is not a safety certification mark. CE mark covers a full range of directives for example EMC directive, RED directive etc. Thus, by looking at CE mark alone it is not possible to say which directive it covers or if some form of safety assessment has been carried out on the component.

A CE marked component may be acceptable if technical file shows that product complies with a relevant harmonised standard under the Low Voltage Directive. This decision can't be based on looking at declaration of conformity alone; some form of a test report should be reviewed.

## Are UL, CSA approved components acceptable?

For product intended to be sold in EU the simple answer to the question above is – no. Some UL and CSA standards are harmonised with European requirements. In such a case there are no issues. However, in other cases UL and CSA approval bares no relevance for European approval as operating conditions during test are different, test levels and hazard levels may be different. This applies the other way round as well. For components intended to be sold in North America, the European approval is not relevant, unless there is harmonisation between UL and European standard.

## How can we help?

Kiwa Electrical Compliance can help you meet the requirements of the Low Voltage Directive (2014/35/EU) / Electrical Equipment (Safety) Regulations. There are four key mandatory aspects needed to demonstrate conformity to the LVD has been meet, these are:

- The Technical File, containing:
- The Safety Test Report
- The manufacturers Declaration of Conformity (DOC)
- Continued Conformity process.

Kiwa Electrical Compliance can support the entire process to ensure the equipment, documentation and processes comply. We can identify the correct safety standards to apply and provide the independent test and assessment documentation via reports and certificates to ensure that any review of your Technical File is satisfied. In particular, we can assist with Technical File compilation, LVD related advice for quality management systems, safety test and assessment (full or partial) and consultancy.

[Get in touch](#) to learn more about our Safety testing services and see how Kiwa Electrical Compliance an established, cost effective, knowledgeable, and complete service solution can help you.