

# Plug and play?

Does your 'previously approved' power supply meet UK plug pin requirements? By **Chris Adkin**.

**G**rowing numbers of industrial and consumer products rely upon a 'previously approved' power supply. These 'approved' power supplies can provide significant benefits, allowing a manufacturer to reduce design, manufacture and approval costs.

But test houses are finding some preapproved power supplies do not meet the correct mains plug tests. In such instances, they must undergo further evaluation and failure to meet the requirements will result in the product being removed from the UK market.

UK regulations require that all domestic electrical goods are fitted with an appropriate mains plug, not only making sure that mains plugs make good connections with sockets, but also that plugs are suitably fused. Since the UK ring main system can deliver 32A (1500A instantaneously), the mains fuse is critical to protect the mains cord. Despite the safety implications, Trading Standards have found instances where traders have relied upon the CE mark and made no attempt to ensure that such plugs were safe.

## Compliancy

Failure to comply with the relevant requirements can cause lengthy delays to a product's approval. For example, it can take two weeks to provide a test report for the power supply itself. If a product is subjected to a verification procedure and is found to be non compliant, it can then take a further two or three weeks to test the power supply plug to the appropriate standard – in this case BS 1363-1. Further misery could be experienced if the non compliance is serious enough to require a redesign or change in power supply.

Changing a power supply at such a late stage could be catastrophic for a product's market release plans and it has been known for projects to be cancelled at this stage, even after

considerable financial outlay.

A number of 'plug in' chargers have been removed from the UK market after serious non compliances were found. One example is a mobile phone charger whose power supply was CE marked and had a EN 60950-1 test report. However, on verification, it was found that there were not only electrical issues with the charger, but also dimensional issues with the plug pins – the live pins were too close to the periphery of the plug, which could lead to an electric shock when inserting into the mains outlet. Furthermore, the live and neutral pins were not robust enough. This unit is now prohibited from being placed on the UK market.

It is advisable to check the IEC or EN test report for specific coverage of the necessary national deviations. It's also a good idea to check that the original test lab's accreditation is up to date – critical in confirming the product is fit for the UK market. If in doubt, seek advice from an accredited test laboratory, which can then review the test report and check all relevant tests are complete and correct.

Seeking expert advice is particularly important if testing has been performed under the IECEE CB scheme, a mutually recognised system for cross territory safety testing. This requires testing to a core IEC standard, which is enhanced by national deviations. CB certificates, stored on the IECEE website, follow a standard format, stating national deviations carried out by the test laboratory. This verification procedure determines whether the power supply is suitably approved for use in the specific country of choice.

Despite the UK's requirement for testing to BS 1363-1, the specific national deviation for the UK under EN 60950-1 (clause 4.3.6) has been marked as 'not applicable' by various Far East test laboratories. Checking this clause within



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test reports is essential to ensure the product has undergone the required testing.

It is critical that a previously approved power supply has its safety compliance verified. This not only ensures user safety, but also minimises the risk of additional costs and delays affecting the launch schedule and profitability.

## Author profile:

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