

# Electrical Supply Tolerances and Electrical Appliance Safety

Many of the UK appointed Notified Bodies for the LVD and the UK Authorities remain concerned that with the UK electricity supply being 230 V +10% -6% and much of Europe being 230 Volt +6% -10% and the standards testing at rated voltage +/-6% that there is a small possibility that some electrical equipment may be unsafe at voltages for which it has not been tested.

Though this issue is often referred to as a UK problem it is not. The UK is one of about 11 countries in the EEA which have an upper voltage limit of 230 V +10%, with of the order of another 13 scheduled to move to the same upper limit in 2008. There are also a number of countries with lower limit less than 230 V – 10%.

Though the electrical supply is quoted as being over a range, it is preferable for power distribution companies to keep supply voltages as high as possible to minimise current in the supply network and hence delaying the need to make improvements to the supply infrastructure to increase the current handling capability. There is information suggesting that certain cities in Europe have already pushed the supply voltage up to the upper limit. It is foreseeable that many will take advantage of the option to raise the supply voltage to 230 +10% at an early opportunity.

The UK Government is of the view that equipment placed on the market in the UK must be safe at the operating voltages which the equipment will find itself exposed. We remain concerned that the standards may be inadequate by not testing over the full voltage range. We have been informally made aware of appliances which have failed at the 230 V +10% limit - there are also allegations of appliances which have been found to be unsafe at 230 V -10%. But as none of these have been formally referred to Government there has been nothing to investigate. Others in industry are also concerned, though others are not.

It was agreed many years ago between the UK appointed Notified Bodies and the UK Government that UK Notified Bodies when assessing products would ensure that the product was safe for all supply voltages that an appliance was liable to be exposed to. The UK Government continues to expect Notified Bodies, when verifying a product, to assess the risks that may be present. The Government considers this to be a risk which should be taken into consideration.

We have been advised that this situation is well known by many major UK wholesalers/distributors/retailers and some will not handle products which have not been assessed against the full supply voltage range within the UK. Whereas the concern raised in this notice is with respect to safety alone their concern may additionally be with performance and fitness for purpose.

Standards & Technical Regulations Directorate  
<http://www.dti.gov.uk/strd>  
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