

White Paper

Cabling standards: 'The domino effect', what do recent changes mean for the industry?



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2015 heralds a volatile period of time regarding the development of cabling standards. Right now we are seeing the domino effect of changes in one standard or regulation affecting multiple other related standards.

ISO/IEC are completely overhauling 11801 for the release of Edition 3.0; the decision has been made to adopt a similar structure as EN 50173 breaking it down into 6 parts in exactly the same way, this will mean far closer harmonization in the future. This alone could almost happen in isolation but it all depends on when the work is completed, will it happen before some of the following is introduced, if it is then it will require an immediate amendment to include the updated information.

One of the key changes we will see within Cenelec standards are amendments to the EN50174 series due to recent changes to the UK wiring regulations bringing in vital safety changes. These relate to containment and pathway systems in evacuation routes. These changes cannot be ignored as they are supported by the Electrical Safety Act and therefore means it is legally enforceable in the UK, but other countries will certainly follow. This key

change will include both how cables are supported along with the flammability rating of the cables themselves, which in turn will also have a bearing on the forthcoming legislation from the EU.

Whilst it has been around for over 15 years, the inclusion of communications cables within the EU Construction Products Regulations from late 2015 will have a very major impact for companies supplying products within the member states as they will not only have to have them tested to the relevant flammability standards and CE marked, they will have to maintain a 'Technical Library' of all the test data. The major change we will see is the introduction of the EuroClass system of fire performance designations (and their impact on all installation standards) it will no doubt add a potent mix of re-specification and confusion. The introduction of these will cover both Copper and Fibre communication systems and have classes from A to F with A being the most fire retardant and F being deemed flammable.

This will not only cause a need to have cables tested to the relevant EuroClass standards, it will also mean the

majority of existing specification documents used in tendering for Voice and Data Installations will also need to be completely re-written.

The next key change comes about by the approval and forthcoming publication of CLC/TR 50174-99-1. This relates to the implementation of remote powering and mitigation of the heating side effects caused by remote powering. It will, in due course have a further impact on EN50174-2 and that of some national standards such as BS6701 and the IET code of conduct for LV and ELV systems, as these are amended to include references to the content.

A lot of the activity regarding Remote Powering is being driven by the announcement from the IEEE that they are targeting even higher levels of PoE (Power over Ethernet) in the near future with up to 49 watts powered, which will be in part achieved by using all four pairs rather than two. They expect to have this agreed and ratified before the end of 2016.

The use of the term 'remote powering' is the most accurate rather than thinking everything is PoE, as there are systems that deliver DC power over structured cabling that have no data transmission capability, as is the case with some LED lighting systems. There is even LV DC powering systems that use proprietary cables hence the publication of the aforementioned IET Code of Conduct.

Also related to remote powering, there is another standard that will be amended which is IEC60512-99-1. This is the testing methodology for mating and unmating under electrical load; basically when unplugging a patch lead from a device that is being powered by PoE it sets off a small electrical arc which in turn over a period of time damages the gold plating on the contacts. The existing test is based on the use of PoE+ 802.3at levels of power, the revision will be based on the proposed higher levels of power outlined earlier in this paper.

2015 will see the publication of the final elements of the EN50600 series relating to design and implementation of Data Centres. Once done we will then see the start of the process for developing both associated standards on how we measure the performance of the DC but also start the inevitable amendment process.

Whilst it may look straightforward there are a number of ramifications that will come out of this and a set of related standards. Firstly the EU is asking the expert panel who have produced this work to now edit the EU Code of Conduct relating to Data Centres, at the same time there is a great deal of effort going into the ISO/IEC 30134 series of standards which looks at the efficiency of the Data Centre. The term PUE (Power Usage Effectiveness) is only one of a number of KPIs (Key Performance Indicators).

Conclusion

Ultimately the EU would like to introduce a levy on 'out of date' inefficient Data Centres and reward those that are not only more efficient but can also demonstrate the use of renewable energy sources.

Therefore collaborative work is just starting between the EU and Cenelec to amend the existing EU Code of Conduct for Data Centres. It was important to Cenelec that all the effort and work that has gone into the EN50600 series was reflected in any potential guidelines coming out of the European Commission that could potentially result additional levies.

As it can be seen, there is a great deal of activity happening right now, some of them very significant and far reaching, therefore it is important to keep abreast of these developments and work with a company that understands all the ramifications such as Excel Networking.

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