Technical Note
TN27: CPR - Eca vs Dca

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There is a level of confusion and misunderstanding surrounding the testing methods employed to classify cables under the CPR. Hopefully this Technical Note will clear up a very important detail.

IEC 60332-1-2 (The test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame) is used as the base test for flame spread for both Eca and Dca Euroclass classifications, but now with an upper limit of 425mm for both.

This is where it ends for Eca; there are no additional requirements to test for Acid Gas and Smoke, which some mistakenly believe is part of the IEC 60332-1-2 test and are needed for a cable to be certified to the LS0H description we have become familiar with.

On the other hand, for the Dca classification we must also carry out the BS EN 50399 & BS EN 60754-2 using a vertical ladder rack test. This goes much further than the previous bundled cable test that was employed in the non-discriminatory IEC 60332-3 series.

We now apply twice the amount of heat as before with a 20.5Kw flame applied to the test sample for 20 minutes, during which time the Total Heat Release, Smoke Production and Peak Smoke Production Rate, Acid Gases and finally, Flaming Droplets are measured.

In conclusion it could be claimed that installing an Eca class cable is really a step backwards if you cannot validate that the smoke and acid gas testing has been carried out separately. Therefore, for that additional peace of mind, it makes total sense to use a Dca cable rather than an Eca cable, if it comes without a premium.

Please note: Further information about CPR and the results of a vertical flame propagation test are available in the Excel Encyclopaedia: **https://www.excel-networking.com/excel-encyclopaedia**

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