B3 INTERNATIONAL

Vertical Flame Spread of Vertically Bunched Wires or Cables

The various parts of IEC / BS EN 60332 specify methods of test for flame spread along cabling. It is particularly important to assess the flame spread properties of cabling since cables crossfire resistant walls, linking occupied spaces to service areas, ceiling voids, etc. Fire spread has been linked to cables in a number of major fires.

A cable specimen, consisting of number of 3.5m length of cables are fixed to a vertical ladder tray where they are applied with one or two flame from a ribbon-type propane gas burner for a specified times under controlled air flow. Four categories (A, B, C & D) are defined and distinguished by test duration and the volume of non-metallic material of the sample under test.

- IEC 60332-3-22 Category A test procedure:
Category A relates only to cables installed on the test ladder to achieve a nominal total volume of non-metallic material of 7 l/m of test sample.
The test flame shall be applied for 40min.

- IEC 60332-3-23 Category B test procedure:
Category B relates only to cables installed on the test ladder to achieve a nominal total volume of non-metallic material of 3.5 l/m of test sample.
The test flame shall be applied for 40min.

- IEC 60332-3-24 Category C test procedure:
The total number of test pieces shall be that number required to provide a nominal total volume of non-metallic material of 1.5 l/m of test sample.
The test flame shall be applied for 20min.

- IEC 60332-3-25 Category D test procedure:
Category D relates only to small cables of overall diameter 12mm or smaller and cross-section of 35mm2 or smaller installed on the test ladder to achieve a nominal total volume of non-metallic material of 0.5 l/m of test sample.
The test flame shall be applied for 20min.

After burning has ceased, the extent of charred or affected portion does not reach a height exceeding 2.5m above the bottom edge of the burner.