Designation: D 6113 – 03

An American National Standard

Standard Test Method for Using a Cone Calorimeter to Determine Fire-Test-Response Characteristics of Insulating Materials Contained in Electrical or Optical Fiber Cables[1]

This standard is issued under the fixed designation D 6113; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This is a fire-test-response standard.

1.2 Several fire-test-response characteristics, including the time to sustained flaming, heat release rate, total heat released, effective heat of combustion, and specific extinction area; are measured or calculated by this test method at a constant radiant heating flux. For specific limitations see also 5.7 and Section 6.

1.3 The tests are conducted by burning the electrical insulating materials contained in electrical or optical fiber cables when the cable test specimens, excluding accessories, are subjected to radiant heat.

1.4 *This standard measures and describes the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire hazard or fire risk assessment of the materials, products or assemblies under actual fire conditions.*

1.5 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability or regulatory limitations prior to use.* For specific precautionary statements, see Section 7.

2. Referenced Documents

2.1 *ASTM Standards:*

D 618 Practice for Conditioning Plastics for Testing[2]

D 1711 Terminology Relating to Electrical Insulation[3]

D 5424 Test Method for Smoke Obscuration of Insulating Materials Contained in Electrical or Optical Fiber Cables When Burning in a Vertical Cable Tray Configuration[4]

D 5485 Test Method for Determining the Corrosive Effect of Combustion Products Using the Cone Corrosimeter[4]

D 5537 Test Method for Heat Release, Flame Spread and Mass Loss Testing of Insulating Materials Contained in Electrical or Optical Fiber Cables When Burning in a Vertical Cable Tray Configuration[4]

E 176 Terminology of Fire Standards[5]

E 691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method[6]

E 906 Test Method for Heat and Visible Smoke Release Rates for Materials and Products[5]

E 1354 Test Method for Heat and Visible Smoke Release Rates for Material snd Products Using an Oxygen Consumption Calorimeter[5]

E 1474 Test Method for Determining the Heat Release Rate of Upholstered Furniture and Mattress Components or Composites Using a Bench Scale Oxygen Consumption Calorimeter[5]

2.2 *CSA Standard:*

CSA C22.2 No. 0.3, FT4, Vertical Flame Tests: Cables in Cable Trays, Section 4.11.4 in C22.2 No. 0.3, Test Methods for Electrical Wires and Cables[7]

2.3 *IEC Standards:*

IEC 695-4 Fire Hazard Testing. Part 4: Terminology Concerning Fire Tests[8]

IEC 695-5-2 Fire Hazard Testing. Part 5: Guidance for Assessing Smoke Corrosivity from Burning of Electrotechnical Products, Section 2: Test Methods[8]

2.4 *IEEE Standard:*

IEEE 1202: Standard for Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies,

[1] This test method is under the jurisdiction of ASTM Committee D09 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.21 on Fire Performance Standards.

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[2] *Annual Book of Standards,* Vol 08.01.

[3] *Annual Book of Standards,* Vol 10.01.

[4] *Annual Book of Standards,* Vol 10.02.

[5] *Annual Book of Standards,* Vol 04.07.

[6] *Annual Book of Standards,* Vol 14.02.

[7] Available from Canadian Standards Association, 5060 Spectrum Way, Mississauga, Ontario, Canada, L4W 5N6.

[8] Available from International Electrotechnical Commission (IEC), 3 Rue de Varembe, Geneva, Switzerland.

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