Designation: D3801 – 10

Standard Test Method for Measuring the Comparative Burning Characteristics of Solid Plastics in a Vertical Position[1]

This standard is issued under the fixed designation D3801; 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 fire-test-response standard covers a small-scale laboratory procedure for determining comparative burning characteristics of solid-plastic material, using a 20-mm (50W) premixed flame applied to the base of specimens held in a vertical position.

NOTE 1—This test method and the 20 mm (50W) Vertical Burning Test (V-0, V-1, or V-2) of ANSI/UL 94 are equivalent.

NOTE 2—This test method and Test Method B of IEC 60695–11–10 are equivalent. IEC 60695–11–10 has replaced ISO 1210.

NOTE 3—For additional information on materials that burn up to the holding clamp by this test method, see Test Method D635. For test methods of flexible plastics in the form of thin sheets and film, see Test Method D4804. For additional information on comparative burning characteristics and resistance to burn-through, see Test Method D5048.

1.2 This test method was developed for polymeric materials used for parts in devices and appliances. The results are intended to serve as a preliminary indication of their acceptability with respect to flammability for a particular application. The final acceptance of the material is dependent upon its use in complete equipment that conforms with the standards applicable to such equipment.

1.3 The classification system described in the appendix is intended for quality assurance and the preselection of component materials for products.

1.4 It is possible that this test is applicable to nonmetallic materials other than plastics. Such application is outside the scope of this technical committee.

1.5 This test method does not cover plastics when used for building construction, finishing or contents such as wall and floor coverings, furnishings, decorative objects etc. In addition, the fire resistance (in terms of an hourly rating), flame spread, smoke characterization and heat release rate are not evaluated by this test. Other fire tests exist and shall be used to evaluate the flammability of materials in these intended end use product configuration.

1.6 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.7 *This standard is used to measure and describe 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.*

1.8 *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 of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D618 Practice for Conditioning Plastics for Testing

D635 Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

D883 Terminology Relating to Plastics

D4804 Test Method for Determining the Flammability Characteristics of Nonrigid Solid Plastics

D5025 Specification for Laboratory Burner Used for Small-Scale Burning Tests on Plastic Materials

D5048 Test Method for Measuring the Comparative Burning Characteristics and Resistance to Burn-Through of Solid Plastics Using a 125-mm Flame

D5207 Practice for Confirmation of 20–mm (50–W) and 125–mm (500–W) Test Flames for Small-Scale Burning Tests on Plastic Materials

[1] This test method is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.30 on Thermal Properties (Section D20.30.03).

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

***A Summary of Changes section appears at the end of this standard**

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