



Standard Test Method for Measuring the Comparative Burning Characteristics and Resistance to Burn-Through of Solid Plastics Using a 125-mm Flame¹

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1. Scope*

1.1 This fire-test-response test method covers a small-scale laboratory procedure for determining the relative burning characteristics and the resistance to burn-through of plastics using small bar and plaque specimens exposed to a 125-mm (500-W nominal) flame.

NOTE 1—This test method is equivalent to IEC 60695-11-20.

NOTE 2—For additional information on comparative burning characteristics of solid plastics in a vertical position, see Test Method D3801.

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 Appendix X1 is intended for quality assurance and the preselection of component materials for products.

1.4 If found to be appropriate, it is suitable to apply the requirements to other nonmetallic materials. Such application is outside the scope of this technical committee.

1.5 This test method is not intended to cover plastics when used as materials for building construction or finishing.

1.6 *Fire testing is inherently hazardous. Adequate safeguards for personnel and property shall be employed in conducting these tests.*

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 hazards or fire risk assessment of 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. See 6.1.1 for a specific hazard statement.*

2. Referenced Documents

2.1 ASTM Standards:²

D883 Terminology Relating to Plastics

D3801 Test Method for Measuring the Comparative Burning Characteristics of Solid Plastics in a Vertical Position

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

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

E176 Terminology of Fire Standards

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

2.2 IEC Standard:³

IEC 60695-11-20 Fire Hazard Testing-Part 11-20: Test Flames - 500 W Flame Test Methods

3. Terminology

3.1 *Definitions of Terms*—For definitions of terms related to plastics used in this test method, refer to Terminology D883. For definitions of terms related to fire used in this test method, refer to Terminology E176.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *afterflame*—persistence of flaming of a material, after the ignition source has been removed.

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.

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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.

³ Publications of the International Electrotechnical Commission (IEC) are available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.