



Designation: D5048 – 20a

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

This standard is issued under the fixed designation D5048; 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 contains a test method for small-scale laboratory procedures to be used to determine 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.

1.1.1 Use Test Method **D3801** for assessing comparative burning characteristics of solid plastics in a vertical position.

NOTE 1—This test method is equivalent to IEC 60695-11-20 and UL 94 (Section 9).

1.2 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 the end-product that conforms with the standards applicable to such end-product.

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

1.6 *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.*

1.7 *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 appro-*

priate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use. See 6.1.1 for a specific hazard statement.

1.8 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

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

E456 Terminology Relating to Quality and Statistics

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

E2935 Practice for Conducting Equivalence Tests for Comparing Testing Processes

2.2 IEC Standard:³

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

2.3 ISO Standards:⁴

ISO 13943 Fire Safety—Vocabulary

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>.

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