



Designation: D 5025 – 99

Standard Specification for Laboratory Burner Used for Small-Scale Burning Tests on Plastic Materials¹

This standard is issued under the fixed designation D 5025; 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 specification covers the physical dimensions and characteristics of a laboratory burner to be used as an ignition source for small-scale burning tests on plastic materials. The burner is used with methane, propane, or butane supply gases for flame heights of 20 to 125 mm.

NOTE 1—The burner described in this specification is suitable for use in the following ASTM standards: Specification C 509, Test Methods D 229, Test Method D 635, Test Methods D 876, Test Method D 3014, Test Method D 3713, Test Method D 3801, Test Methods D 4804, Test Method D 4986, Test Method D 5048, and Test Method F 777. Safety hazards and known limitations on applicability of fire-test-response standards are addressed in the individual test methods.

NOTE 2—This specification is referenced in ISO 10093 as ignition source P/PF2.

NOTE 3—This specification is equivalent to IEC 60695-2-4/2 for a 500-W flame and IEC 60695-2-4/3 for a 50-W flame.

2. Referenced Documents

2.1 ASTM Standards:²

- C 509 Specification for Elastomeric Cellular Preformed Gasket and Sealing Material
- D 229 Test Methods for Rigid Sheet and Plate Materials Used for Electrical Insulation
- D 635 Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
- D 876 Test Methods for Nonrigid Vinyl Chloride Polymer Tubing Used for Electrical Insulation
- D 883 Terminology Relating to Plastics
- D 1600 Terminology of Abbreviated Terms Relating to Plastics

D 3014 Test Method for Flame Height, Time of Burning, and Loss of Mass of Rigid Thermoset Cellular Plastics in a Vertical Position

D 3713 Test Method for Measuring Response of Solid Plastics to Ignition by a Small Flame

D 3801 Test Method for Measuring the Comparative Extinguishing Characteristics of Solid Plastics in a Vertical Position

D 4804 Test Methods for Determining the Flammability Characteristics of Nonrigid Solid Plastics

D 4986 Test Method for Horizontal Burning Characteristics of Cellular Polymeric Materials

D 5048 Test Method for Measuring the Comparative Burning Characteristics and Resistance to Burn-Through of Solid Plastics Using a 125-mm Flame

D 5207 Practice for Calibration of 20 and 125-mm Test Flames for Small-Scale Burning Tests on Plastic Materials

E 176 Terminology of Fire Standards

F 777 Test Method for Resistance of Electrical Wire Insulation Materials to Flame at 60°³

2.2 ISO Standards:

ISO 10093 Plastics—Standard Ignition Sources⁴

2.3 IEC Standards:

IEC 60695-2-4/2 Fire Hazard Testing—Part 2: Test Methods. Section 4, Sheet 2: 500W Nominal Premixed Test Flame and Guidance⁴

IEC 60695-2-4/3 Fire Hazard Testing—Part 2: Test Methods. Section 4, Sheet 3: 50W Nominal Premixed Test Flame and Guidance⁴

3. Terminology

3.1 *Definitions*—For terms relating to plastics, the definitions are in accordance with Terminology D 883, and the abbreviations are in accordance with Terminology D 1600. For terms relating to fire, the definitions are in accordance with Terminology E 176.

¹ This specification 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 Withdrawn.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

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