



ANSI/ASTM D 757 - 77

AMERICAN SOCIETY FOR TESTING AND MATERIALS

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Standard Test Method for INCANDESCENCE RESISTANCE OF RIGID PLASTICS IN A HORIZONTAL POSITION¹

This Standard is issued under the fixed designation D 757; 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 reappraisal.

1. Scope

1.1 This method provides for laboratory comparisons of the resistance of rigid plastics to an incandescent surface at $950 \pm 10^\circ\text{C}$ ($1742 \pm 18^\circ\text{F}$). It may supplement tests using a flame source of ignition, such as Method D 635.

1.2 **Caution**—During the course of combustion, gases or vapors, or both, are evolved which may be hazardous to personnel. Adequate precautions should be taken to protect the operator.

NOTE 1—For a test on the burning rate of plastics in the form of thin sheets, reference should be made to Method D 568, Test for Rate of Burning and/or Extent and Time of Burning of Flexible Plastics in a Vertical Position.² The burning rate of sheet and plate insulation is covered in Methods D 229, Testing Sheet and Plate Materials Used for Electrical Insulation.²

NOTE 2—The burning rate of plastic foams in a horizontal position mounted on a metal mesh screen can be determined by Method D 1692, Test for Rate of Burning and/or Extent and Time of Burning of Cellular Plastics Using a Specimen Supported by a Horizontal Screen.²

1.3 *This standard should be used to measure and describe the properties of materials, products, or systems in response to heat and flame under controlled laboratory conditions and should not be used for the description or appraisal of the fire hazard of materials, products, or systems under actual fire conditions.³*

NOTE 3—The values stated in SI units are to be regarded as the standard.

2. Applicable Documents

2.1 ASTM Standards:

D 618 Conditioning Plastics and Electrical Insulating Materials for Testing²

D 635 Test for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position.²

3. Significance

3.1 This method provides comparative data, useful for research and production quality control work when it is desirable to evaluate the resistance of plastics to an incandescent heat source. Correlation with burning characteristics under actual use conditions is not implied.

3.2 The test results will vary with specimen thickness. Test results should be compared with data for a control material of known performance and of comparable thickness. Sheet materials that have been stretched during processing may relax during burning and give erratic results unless they are first heated above their temperature of deflection under load for a time sufficient to permit complete relaxation.

3.3 This method is not intended to be a criterion for fire hazard. The fire hazard created by materials depends upon the form and end use of the material. Assessment of fire hazard includes, but is not limited to, many factors, such as, ease of ignition, burning rate, flame spread, fuel contribution, intensity of burning, and products of combustion.

4. Apparatus

4.1 **Test Chamber**—A laboratory hood, equipped with a door for complete enclosure and a window for observing the test. The exhaust fan used to remove products of combustion shall be either turned off during the test

¹ This method is under the jurisdiction of ASTM Committee D-20 on Plastics, and is the direct responsibility of Subcommittee D20.30 on Thermal Properties.

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² Annual Book of ASTM Standards, Part 35.

³ This caveat has been placed in the standard in accordance with a policy established by the ASTM Board of Directors in September 1973. The caveat will remain in this standard until Committee E-39 on Fire Hazard Standards has approved it as a fire hazard standard.