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.

Designation: D635 – 18

Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position[1]

This standard is issued under the fixed designation D635; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This fire-test-response test method covers a small-scale laboratory screening procedure for comparing the relative linear rate of burning or extent and time of burning, or both, of plastics in the form of bars, molded or cut from sheets, plates, or panels, and tested in the horizontal position.

NOTE 1—This test method, and test method A of IEC 60695-11-10 are technically equivalent.

NOTE 2—For additional information on materials which do not burn to the first reference mark by this test, 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 standard 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 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *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.*

1.6 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* For specific hazards statements, see 9.2.

1.7 *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]

D618 Practice for Conditioning Plastics for Testing
D648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
D883 Terminology Relating to Plastics
D1929 Test Method for Determining Ignition Temperature of Plastics
D2843 Test Method for Density of Smoke from the Burning or Decomposition of 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
E84 Test Method for Surface Burning Characteristics of Building 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 Testing in Laboratory Applications

[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).

Current edition approved Nov. 1, 2018. Published November 2018. Originally approved in 1941. Last previous edition approved in 2014 as D635 – 14. DOI: 10.1520/D0635-18.

[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

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. United States