



Designation: D 5132 – 02

Standard Test Method for Horizontal Burning Rate of Polymeric Materials Used in Occupant Compartments of Motor Vehicles¹

This standard is issued under the fixed designation D 5132; 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 test method is intended for use as a small-scale laboratory procedure for comparing the relative horizontal burning rates of polymeric materials used in occupant compartments of motor vehicles.

1.2 Units—The values stated in SI units are to be regarded as standard.

1.3 This test method, Federal Safety Standard MVSS 302, SAE J369, and ISO 3795 Standards are technically equivalent.

1.4 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.

1.5 *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.* Specific hazard statements are given in Section 7.

2. Referenced Documents

2.1 ASTM Standards:

D 5025 Specification for Laboratory Burner Used in Small-Scale Burning Tests on Plastic Materials²

E 176 Terminology of Fire Standards³

E 691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method⁴

2.2 Federal Safety Standard:

MVSS 302 Flammability of Interior Materials-Passenger Cars, Multipurpose Passenger Vehicles, Trucks and Buses⁵

2.3 SAE Standard:

SAE J369 Flammability of Polymeric Interior Materials - Horizontal Test Method⁶

2.4 ISO Standard:

ISO 3795 Road vehicles, and tractors and machinery for agriculture and forestry—Determination of burning behavior of interior materials⁷

3. Terminology

3.1 *Definitions*—For definitions of fire-related terms used in this test method refer to Terminology E 176.

4. Summary of Test Method

4.1 This test method employs a standard test specimen (100 × 356) mm with a thickness up to 13 mm, mounted in a U-shaped metal frame. The specimen is ignited by means of a 38-mm high flame from an appropriate burner, and the burning rate of the material is determined.

4.2 The rate of burning is determined by measurements of the horizontal distance burned in relation to the time of burning, and reported for each set of specimens.

5. Significance and Use

5.1 This test method provides a standard laboratory procedure for measuring and comparing the burning rates of polymeric materials under specified controlled conditions.

5.2 The rate of burning is affected by such factors as density, direction of rise, and type and amount of surface treatments. The thickness of the finished specimens must also be taken into account. These factors must be considered in order to compare materials on the same basis.

5.3 In this procedure, the specimens are subjected to one or more specific sets of laboratory test conditions. If different test conditions are substituted or the end-use conditions are changed, it is not always possible by or from this test method to predict changes in the fire-test-response characteristics measured. Therefore, the results are valid only for the fire test exposure conditions described in this procedure.

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 *Annual Book of ASTM Standards*, Vol 08.03.

³ *Annual Book of ASTM Standards*, Vol 04.07.

⁴ *Annual Book of ASTM Standards*, Vol 14.02.

⁵ United States Code of Federal Regulations, 49 CFR 571.302, 36 FR 28991, available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

⁶ Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001.

⁷ Available from International Organization for Standardization (ISO), 1 rue de Varembe, Case postale 56, CH-1211, Geneva 20, Switzerland.

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