



Designation: D 4433 – 84 (Reapproved 1989)

Standard Specification for Flame-Resistant Treated Paper and Paperboard¹

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1. Scope

1.1 This specification covers flame-resistant paper and paperboard less than 0.0625 in. (1.588 mm) in thickness used in such applications as wall insulation backing, decorations, displays, flammable materials, packaging, and the like.

1.2 This specification pertains to all classes of paper and paperboard material less than 0.0625 in. (1.588 mm) in thickness that are treated to prevent the spread of flame when ignited.

2. Referenced Documents

2.1 ASTM Standards:

D 585 Practice of Sampling and Accepting a Single Lot of Paper, Paperboard, Fiberboard, or Related Product²

D 685 Practice for Conditioning Paper and Paper Products for Testing²

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications³

2.2 TAPPI Standard:

T 461 Flame Resistance of Treated Paper and Paperboard⁴

3. Descriptions of Terms Specific to This Standard

3.1 *flaming time*—the time the specimen continues to flame after the burner flame is removed.

3.2 *glowing time*—the time the specimen continues to glow after it has ceased to flame.

3.3 *char length*—the height of the void area of the specimen resulting from the breaking out of the material charred during testing. Measured from the bottom edge of the specimen and reported to the nearest $\frac{1}{10}$ in. (2.5 mm).

¹ This specification is under the jurisdiction of ASTM Committee D-6 on Paper and Paper Products and is the direct responsibility of Subcommittee D06.10 on Consumer Paper Products.

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Replaces Voluntary Product Standard PS 46 – 71 of the U.S. Department of Commerce, National Bureau of Standards.

Underwriters Laboratories UL 94 does not apply.

² Annual Book of ASTM Standards, Vol 15.09.

³ Annual Book of ASTM Standards, Vol 14.02.

⁴ Available from the Technical Association of the Pulp and Paper Industry, P.O. Box 105113, Atlanta, GA 30348.

4. Classification

4.1 The two *types* of treatment applied to paper and paperboard are as follows:

4.1.1 *Type I*—Nondurable treatments meeting the requirements specified in Table 1 before leaching in water.

4.1.2 *Type II*—Durable treatments meeting the requirements specified in Table 1 after leaching in water.

4.2 The two *classes* of paper and paperboard are as follows:

4.2.1 *Class A*—Decorative papers of less than 0.004 in. (0.102 mm) measured in the form of a flat sheet.

4.2.2 *Class B*—Decorative papers of more than 0.004 in. (0.102 mm) and less than 0.0625 in. (1.588 mm) measured in the form of a flat sheet, and all construction and packaging papers regardless of thickness up to 0.0625 in.

5. General Requirements

5.1 The material shall conform to the requirements specified in Table 1 when sampled, conditioned, and tested using the referenced test methods.

6. Workmanship

6.1 The material shall be uniform in thickness, density, formation, and texture. As determined by acceptable manufacturing standards, materials shall be free from imperfections, dirt, particles, or other foreign materials.

7. Sampling

7.1 Sample the material in accordance with Method D 585.

8. Test Methods

8.1 Determine the flame-resistant properties of the paper and paperboard material in accordance with TAPPI T 461 os-79.

9. Retest and Rejection

9.1 If the results of any test do not conform to the requirements prescribed in this specification, repeat the test on two additional samplings of specimens from the same batch or shipment, each of which shall conform to the requirements specified. If either of these two additional samplings of specimens fails, consider the material failing.