



Standard Test Method for Abrasion Resistance of Textile Fabrics (Flexing and Abrasion Method)¹

This standard is issued under the fixed designation D3885; 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 method² covers the determination of the abrasion resistance of woven or nonwoven textile fabrics using the flexing and abrasion tester.

1.2 This test method applies to most woven and nonwoven fabrics providing they do not stretch excessively. It is not applicable to floor coverings.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as the standard. Within the text, the inch-pound units are shown in parentheses. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with this test method.

1.4 *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.*

NOTE 1—For other test methods for abrasion resistance of textiles refer to Test Methods D3884, D3886, D4157, D4158, D4966, and AATCC93.

2. Referenced Documents

2.1 ASTM Standards:³

D76 Specification for Tensile Testing Machines for Textiles
D123 Terminology Relating to Textiles
D1776 Practice for Conditioning and Testing Textiles
D2904 Practice for Interlaboratory Testing of a Textile Test

¹ This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.60 on Fabric Test Methods, Specific.

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² This test method is based upon the development described by Stoll, R.G., “Improved Multipurpose Abrasion Tester and its Application for the Evaluation of the Wear Resistance of Textiles,” *Textile Research Journal*, July, 1949, p. 394.

³ 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.

Method that Produces Normally Distributed Data (Withdrawn 2008)⁴

D2906 Practice for Statements on Precision and Bias for Textiles (Withdrawn 2008)⁴

D3884 Guide for Abrasion Resistance of Textile Fabrics (Rotary Platform, Double-Head Method)

D3886 Test Method for Abrasion Resistance of Textile Fabrics (Inflated Diaphragm Apparatus)

D4157 Test Method for Abrasion Resistance of Textile Fabrics (Oscillatory Cylinder Method)

D4158 Guide for Abrasion Resistance of Textile Fabrics (Uniform Abrasion)

D4850 Terminology Relating to Fabrics and Fabric Test Methods

D4966 Test Method for Abrasion Resistance of Textile Fabrics (Martindale Abrasion Tester Method)

D5035 Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)

2.2 AATCC Test Method:

AATCC 93 Abrasion Resistance of Fabrics: Accelerator Method⁵

3. Terminology

3.1 For all terminology related to D13.60, Fabric Test Methods, Specific, see Terminology D4850.

3.2 The following terms are relevant to this standard: abrasion, abrasion cycle, breaking force, double-stroke, flexibility, standard atmosphere for preconditioning textiles, standard atmosphere for testing textiles.

3.3 For all other terminology related to textiles, see Terminology D123.

4. Summary of Test Method

4.1 Abrasion resistance is measured by subjecting the specimen to unidirectional reciprocal folding and rubbing over a specific bar under specified conditions of pressure, tension, and abrasive action. Resistance to abrasion is evaluated by either

⁴ The last approved version of this historical standard is referenced on www.astm.org.

⁵ Available from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.