



Standard Test Method for Pile Fabric Abrasion¹

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1. Scope

1.1 This test method covers the determination of the abrasion of pile fabrics when the loss of pile tufts occur, sometimes called pile retention or pile pull out. It includes two procedures:

1.1.1 *Procedure A*—The “Heavy Duty” procedure describes the test option for fabrics over 240 g/m² (7 oz/yd²) or fabrics which should meet heavy duty end-use conditions of wear.

1.1.2 *Procedure B*—The “Light Duty” procedure describes the test option for fabrics under 240 g/m² (7 oz/yd²) or fabrics which should meet light duty end-use conditions of wear.

1.2 The test method is intended for both regular, ribless woven corduroy or other woven pile fabric constructions.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. 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 non-conformance with the standard.

1.4 *This standard may involve hazardous materials, operations, and equipment. 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.*

2. Referenced Documents

2.1 *ASTM Standards*:²

[D123 Terminology Relating to Textiles](#)

[D1776 Practice for Conditioning and Testing Textiles](#)

[D2724 Test Methods for Bonded, Fused, and Laminated Apparel Fabrics](#)

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

¹ This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.59 on Fabric Test Methods, General.

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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.

[D4850 Terminology Relating to Fabrics and Fabric Test Methods](#)

[E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods](#)

[E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)

2.2 *ASTM Adjunct*:³

[Photographic Scale for Pile Retention](#)

2.3 *AATCC Method*:⁴

[TM 135 Dimensional Changes of Fabrics after Home Laundering](#)

3. Terminology

3.1 For all terminology related to D13.59 on Fabric Test Methods, General, see Terminology [D4850](#).

3.2 The following terms are relevant to this standard: abrasion, corduroy, pile fabric, pile retention, velveteen.

3.3 For definitions of all other textile terms see Terminology [D123](#).

4. Summary of Test Method

4.1 Test specimens are exposed to a specified number of abrasion cycles on face and back separately and then evaluated by viewing the specimen over a light box and comparing to photographic standards. The method measures only the amount of pile pulled out of the base fabric structure and not the surface pile appearance attributes, such as crushed or flatten ribs.

5. Significance and Use

5.1 This test method is considered satisfactory for quality control testing and commercial shipment acceptance.

5.1.1 In case of a dispute arising from differences in reported test results when using this test method, the purchaser and the supplier should conduct comparative tests to determine if there is a statistical bias between their laboratories. Competent statistical assistance is recommended for the investigation of bias. As a minimum, the two parties should take test

³ A set of six photographic standards for pile retention of corduroy fabrics is available from ASTM International Headquarters. Order Adjunct No. [ADJ4685](#).

⁴ Available from American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709, <http://www.aatcc.org>.