



Standard Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Elastomeric Pad¹

This standard is issued under the fixed designation D3514/D3514M; 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 covers the determination of the propensity of a fabric to form pills and other related surface changes on textiles using the Stoll Quartermaster Universal Wear Tester with the frosting attachment. The procedure is generally applicable to all types of woven and knitted fabrics.

NOTE 1—For other current test methods of testing the pilling resistance of textiles, refer to Test Methods [D3511/D3511M](#), [D3512/D3512M](#), and [D4970/D4970M](#).

1.2 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.

1.3 The fabric may be laundered or dry cleaned before testing.

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](#)

[D3511/D3511M Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Brush Pilling Tester](#)

[D3512/D3512M Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Ran-](#)

[dom Tumble Pilling Tester](#)

[D4848 Terminology Related to Force, Deformation and Related Properties of Textiles](#)

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

[D4970/D4970M Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Martindale Tester](#)

2.2 ASTM Adjuncts:

[ADJD3512 Set of Photographic Standards for Random Tumble Pilling Test³](#)

[ADJD3514 Three Sets of Five Photographic Standards for Elastomeric Pad Pilling Test⁴](#)

3. Terminology

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

3.2 For all terminology relating to Force, Deformation and Related Properties in Textiles, refer to Terminology [D4848](#).

3.2.1 The following terms are relevant to this standard: *fuzz*, *pilling resistance*, *pills*.

3.3 For all other terminology related to textiles, refer to Terminology [D123](#).

4. Summary of Test Method

4.1 Pilling and other changes in surface appearance that occur in normal wear are simulated on a laboratory testing machine. Fabric samples are washed or drycleaned, depending on expected refurbishment, followed by controlled rubbing against an elastomeric pad having specifically selected mechanical properties. The degree of fabric pilling is evaluated by comparison of the tested specimens with visual standards that may be actual fabrics, or photographs of fabrics, showing a range of pilling resistance. The observed resistance to pilling is reported using an arbitrary rating scale.

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 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.

³ Available from ASTM International Headquarters. Order Adjunct No. [ADJD3512](#). Original adjunct produced in 1993.

⁴ Available from ASTM International Headquarters. Order Adjunct No. [ADJD3514](#).