



Standard Test Method for Accelerated Soiling of Pile Yarn Floor Covering¹

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1. Scope

1.1 This test method describes the equipment, and the test method for assessing the propensity of pile yarn floor coverings to soiling in the absence of abrasive wear and texture changes, using a standard synthetic soil composition.

1.2 This test method is applicable for use in testing unused pile yarn floor covering of all types. It is not applicable for use in testing used pile yarn floor covering.

1.3 This test method can be used to compare the soiling propensity of two or more carpets; or it can be used to soil carpets as a preliminary step to other test procedures.

1.4 The values stated in SI units are to be regarded as the standard. The inch-pound units given in parenthesis are for information only.

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.*

2. Referenced Documents

2.1 ASTM Standards:

D 123 Terminology Relating to Textiles²

D 1776 Practice for Conditioning Textile Testing²

D 2906 Statements on Precision and Bias for Textiles²

D 5684 Terminology Relating to Pile Yarn Floor Coverings³

2.2 ASTM Adjunct:

TEX-PAC⁴

2.3 AATCC Test Method:

Evaluation Procedure 1 – Gray Scale for Color Change⁵

2.4 ISO Standards:

105–J01 Textile—Tests for colour fastness—Part J01: Measurement of Colour and Colour Differences⁶

3. Terminology

3.1 *Definitions*—For definitions of pile yarn floor covering related terms used in this standard, Refer to Terminology D 5684. For definitions of other textile terms used in this standard, Refer to Terminology D 123.

4. Summary of Test Method

4.1 The carpet test specimens are secured to a backing sheet that is mounted inside the drum with the pile surface exposed, and are subjected to an accelerated soiling process. The degree of soiling is measured or assessed by comparing the change in color between soiled and original pile yarn floor covering, using a measurement device or visually matching the differences on the light-dark axis of Jumbo Gray Scales.

NOTE 1—Differentiation between test samples is significantly reduced when Jumbo Gray Scales are used.

5. Significance and Use

5.1 This test method may be used to soil test specimens in the absence of abrasive wear and texture changes under controlled conditions using a standard synthetic soil, or as a preliminary step to other procedures.

5.2 This test method will provide a uniformly soiled test specimen to evaluate, is reproducible (see section 11), and is economical for Testing Laboratories.

5.3 This test method has been found to give results similar to the actual floor service soiling, but its use is recommended only as a screening test method and not as a replacement for floor testing.

5.4 The acceptance criteria of this test method shall be set by mutual agreement between the purchaser and supplier.

6. Apparatus and Materials

6.1 Hexapod Tumble Tester

6.1.1 *Drum*—Constructed of molded PVC and is capped by a lid that is secured. The drum base and lid have a locating groove to hold the specimen backing sheet flat to the inner wall of the drum. The drum dimensions are:

Internal Diameter	305 ± 1 mm	(12 ± 0.04 in.)
Wall Thickness	8 mm approx.	(0.03 in. approx.)
Internal Depth	200 ± 1 mm	(7.9 ± 0.04 in.)

6.1.2 *Driving System*—Cradles the drum on rollers and keeps the axis of the drum level, rotates at 0.6 ± 0.03 r/s (35 ± 2 rpm). The driving system reverses every 15 min with

¹ This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.21 on Pile Yarn Floor Coverings.

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² Annual Book of ASTM Standards, Vol 07.01.

³ Annual Book of ASTM Standards, Vol 07.02.

⁴ The PC program on floppy disks for analyzing Committee D13 interlaboratory data are available from ASTM. Request ADJ D2904.

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

⁶ Available from American National Standards Institute, 11 West 42nd Street, 18th Floor, New York, NY 10036.