Designation: D7241 – 13

Standard Test Method for Pile Thickness of Finished Multilevel Pile Yarn Floor Covering[1]

This standard is issued under the fixed designation D7241; 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 pile thickness of finished multilevel pile yarn floor covering using a thickness measuring instrument having a stationary surface (platen), a circular pressure foot under specified force, and capable of being moved vertically above the platen.

1.2 This test method is applicable only to finished multilevel loop pile constructions.

NOTE 1—Determination of pile thickness of multilevel pile yarn floor coverings was previously contained within Test Method D418. For user convenience, Subcommittee D13.21 subdivided Test Method D418 into separate standards of which this test method is one.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D123 Terminology Relating to Textiles
D1776 Practice for Conditioning and Testing Textiles
D5684 Terminology Relating to Pile Floor Coverings
D5823 Test Method for Tuft Height of Pile Floor Coverings
E122 Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process

3. Terminology

3.1 For definitions of terms relating to Pile Floor Coverings, refer to the Terminology D5684.

3.2 The following terms are relevant to this standard: carpet, cut pile yarn floor covering, finished, finished pile yarn floor covering, floor covering, pile, pile thickness, pile yarn floor covering, pitch, primary backing, shorn pile stubble, stubble height, textile floor covering, tufted fabric.

3.3 For definitions of other terms related to textiles, refer to Terminology D123.

3.4 For discussion of terminology specific to this standard, see Annex A1.

4. Summary of Test Method

4.1 The thickness and mass are measured on each selected strip specimen in the unsheared condition and after removing approximately 25, 50, 75 % and all of the pile down to a stubble by shearing. The net pile thicknesses at the 25, 50, and 75 % levels are calculated by subtracting the stubble specimen thickness from the thicknesses measured at each of the other stages. The net pile masses are calculated by subtracting the mass of the stubble specimen from the four other weighings. The 25, 50, and 75 % net masses are expressed as a percent of the net pile mass of the unsheared specimen and the 25, 50, and 75 % net thicknesses are plotted against these net mass percentages. A smooth curve is drawn through the three plotted points. The net pile thickness corresponding to 50 % net mass is read from the smooth curve and doubled to obtain the average pile thickness.

5. Significance and Use

5.1 The determination of pile thickness of multilevel pile yarn floor covering is useful in quality and cost control during manufacture of pile yarn floor covering. The appearance and performance may be affected by changes in pile thickness of pile yarn floor coverings. This test method is considered satisfactory for acceptance testing of commercial shipments because current estimates of between laboratory precision are acceptable, and this test method is commonly used in the trade for acceptance testing.

[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 Floor Coverings.

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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.

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