



Designation: D7267 – 06

# Standard Test Method for Edge Ravel Resistance of Finished Loop Pile, Pile Yarn Floor Covering<sup>1</sup>

This standard is issued under the fixed designation D7267; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method covers the determination of the force required to ravel a yarn from the edge of a loop pile, tufted, carpet.

1.2 *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:*<sup>2</sup>

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D2904 Practice for Interlaboratory Testing of a Textile Test Method that Produces Normally Distributed Data (Withdrawn 2008)<sup>3</sup>

D2906 Practice for Statements on Precision and Bias for Textiles (Withdrawn 2008)<sup>3</sup>

D5684 Terminology Relating to Pile Floor Coverings

## 3. Terminology

3.1 For definitions of terms relating to pile floor coverings, refer to Terminology D5684.

3.2 The following terms are relevant to this standard: carpet, constant-rate-of-extension, finished, finished pile yarn floor covering, floor covering, loop pile yarn floor covering, pile, pile yarn floor covering, textile floor covering, tuft, tuft leg, tufted fabric, edge ravel.

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

<sup>1</sup> 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. Current edition approved June 1, 2006. Published July 2006. DOI: 10.1520/D7267-06.

<sup>2</sup> 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.

<sup>3</sup> The last approved version of this historical standard is referenced on www.astm.org.

## 4. Summary of Test Method

4.1 A yarn end is raveled from a loop pile floor covering using a tensile testing machine. The force required to pull the tufted yarn from the edge of a tufted loop pile floor covering is measured and recorded. The required load or force to remove the yarn from the specimen is calculated and defined as “edge ravel strength.”

## 5. Significance and Use

5.1 The satisfactory performance of a loop pile floor covering depends, to a considerable extent, on the installation and maintenance of the product. A loop pile floor covering with inadequate edge ravel strength may result in loops pulling out from the backing, resulting in an aesthetically displeasing appearance. Tuft rows located at the seam of a loop pile floor covering are the most susceptible to raveling.

## 6. Apparatus

6.1 *Tensile Testing Machine*—A constant-rate-of extension (CRE) type conforming to Specification D76, a constant rate of speed of  $300 \pm 10$  mm/min ( $12 \pm 0.5$  in./min) is required. Full-scale loads rang from 0.545 to 4.53 kg (1 to 10 lb) are generally adequate. A constant rate of traverse (CRT) type tensile testing machine conforming to the Specification D76 and operated at the same speed is permitted. There may be no overall correlation with CRE-type and CRT-type testing machines. Consequently, the two machines cannot be used interchangeably. In the case of controversy, the CRE-type testing machine shall prevail.

6.2 *Clamps and Jaw Faces*—The use of hydraulic or pneumatic, serrated or padded face, clamping systems with a minimum of 25 by 75 mm (1 by 3 in.) are recommended to reduce specimen slippage. The faces shall be parallel and have matching centers with respect to one another (in the same clamp) and to the corresponding jaw face of the other clamp.

## 7. Sampling, Test Specimens, and Test Units

7.1 *Lot Sample*—When performing acceptance testing for a sample lot, take at random the number of rolls or pieces of pile yarn floor covering as directed on an applicable material specification or other agreement between the purchaser and the supplier. Consider the rolls or pieces of pile yarn floor covering

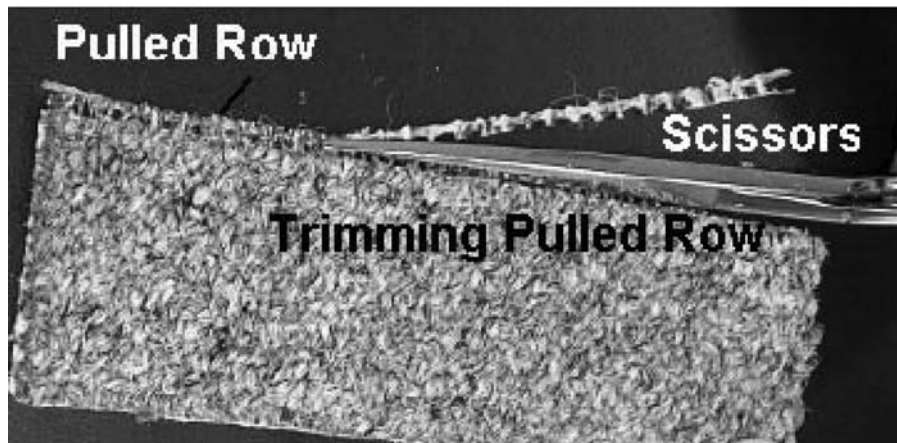


FIG. 1 Photograph of Trimming the Edge of a Pulled Tufted Row of Yarn

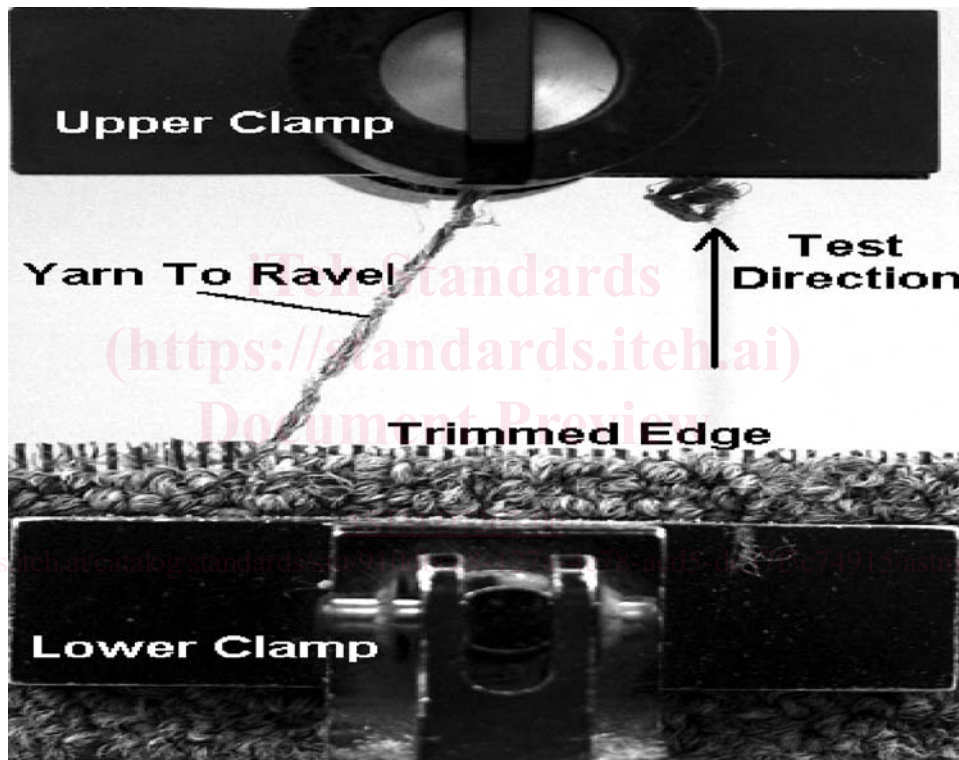


FIG. 2 Photograph of Edge Ravel Specimen Ready for Testing

to be the primary sampling units. In the absence of such agreement, take one roll or piece from the lot to be tested.

**7.2 Laboratory Sample**—For acceptance testing, take a “laboratory sampling unit” that is a minimum of 460 mm (18 in.) in the machine direction by full width (cross machine direction) from each roll or piece in the lot sample.

**7.3 Test Specimens**—From each laboratory sample unit, cut three specimens with the longer direction parallel to the machine direction. Consider the long dimension as the direction of the test.

**7.4 Specimen Dimension**—Cut the specimens to a width/length dimension of 50 by 150 mm  $\pm$  2 mm (2 by 6 in.  $\pm$  0.1 in.), respectively.

**7.5 Specimen Sampling and Labeling**—Obtain specimens, representing a broad distribution along the length and width of each laboratory sample unit. Take one specimen near each edge of the sampling unit but, no nearer the edge than 5 % of the width, and take one specimen from the center area. Ensure that specimens are free of folds, creases or wrinkles. Label to maintain specimen identity.

**7.6 Preparation of Specimens**—With hemostats or like device, grasp a yarn end that is near to the edge of the specimen and that can be pulled the entire specimen length. Remove the entire tufted row of yarn from the specimen.

**7.7** With scissors or knife remove the void backing area (created by removing the tufted row of yarn in 7.6), See Fig. 1.