



Designation: D 1234 – 85 (Reapproved 1995)

## Standard Test Method of Sampling and Testing Staple Length of Grease Wool<sup>1</sup>

This standard is issued under the fixed designation D 1234; 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<sup>2</sup> covers procedures for sampling and measuring the unstretched staple length, and variability in length, of grease or pulled wool staples. The test method is also applicable to mohair and other animal fibers in staple form. The procedure is not recommended for individual fibers or groups of straightened fibers.

NOTE 1—The determination of fiber length in wool top is covered in Test Method D 519, the determination of fiber length of wool is covered in Test Method D 1575.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values stated in SI units are provided for information purposes only.

1.3 *This standard does not purport to address 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 Textiles<sup>3</sup>

D 519 Test Method for Length of Fiber in Wool Top<sup>3</sup>

D 1575 Test Method for Fiber Length of Wool in Scoured Wool and Card Sliver<sup>3</sup>

D 4271 Practice for Writing Statements on Sampling in Test Methods for Textiles<sup>4</sup>

### 3. Terminology

#### 3.1 Definitions:

3.1.1 *grease wool, n*—wool taken from the living sheep and which has not been commercially scoured.

3.1.2 *staple, n—in grease wool*, a tuft or lock of fibers which naturally cling together, as found in a fleece.

3.1.3 *staple length, n—in grease wool*, the length of a staple obtained by measuring the natural staple without stretching or

disturbing the crimp of the fibers.

3.1.4 For definitions of other terms used in this test method, refer to Terminology D 123.

### 4. Summary of Test Method

4.1 By hand or by means of a sampling tool, staples (subsampling units) are withdrawn from randomly selected sampling units (bags, bales, or packages) from a lot of wool or other animal fibers. The unstretched lengths of the staples are measured and the average staple length, standard deviation, and coefficient of variation calculated.

### 5. Significance and Use

5.1 The testing procedure in this test method for the determination of staple length is considered satisfactory for acceptance testing of commercial shipments of grease wool since the method has been used in the trade for acceptance testing.

5.1.1 In case of a dispute arising from differences in reported test results when using this test method for acceptance testing of commercial shipments, 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 a group of test specimens that are as homogeneous as possible and that are from a lot of material of the type in question. The test specimens should then be randomly assigned in equal numbers to each laboratory for testing. The average results from the two laboratories should be compared using Student's *t*-test for unpaired data and an acceptable probability level chosen by the two parties before the testing is begun. If a bias is found, either its cause must be found and corrected, or the purchaser and the supplier must agree to interpret future test results in the light of the known bias.

5.2 The test method is used for the determination of the average unstretched staple length and the staple length distribution of a lot of wool in order to assign length classes when determining the conformance of lots and shipments to length specifications.

5.3 In this test method, the size of a lot covered by the test procedure is limited to not more than 200 packages per test. Any shipment exceeding the above limits is divided into lots within the prescribed limits.

5.4 The nature of the sampling procedure is such that grease

<sup>1</sup> This method is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.13 on Wool and Wool Felt.

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<sup>2</sup> Further information covering the procedures and techniques described in this method appears in D. D. Johnston, H. Dean Ray, W. J. Manning, and E. M. Pohle, "Relationships of Staple Length in Grease Wool and Resultant Top," *Textile Research Journal*, Vol 21, October 1951, pp. 757–762.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 07.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 07.02.