Designation: D 2130 – 90 (Reapproved 2001)

Standard Test Method for Diameter of Wool and Other Animal Fibers by Microprojection[1]

This standard is issued under the fixed designation D 2130; 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 a procedure, using the microprojector, for the determination of the average fiber diameter and the fiber diameter variation on wool and other animal fibers, such as mohair, cashmere, alpaca, camel's hair, etc. (Note 1) in their various forms.

1.2 The values stated in inch-pound units are to be regarded as the standard. The metric equivalents of inch-pound units may be approximate.

NOTE 1—This test method may also be applied to any fibers having a round cross section and accordingly may be used many times for melt-spun man-made fibers such as polyamides, polyesters, and glass; also it may be applied to a limited number of polyacrylics and regenerated cellulose type fibers. The values given in Appendix X1 for density and correction factors, however, apply only to wool and should not be used for other fibers. For suitable values for the density of other fibers, see Table 5 in Test Methods D 629, Quantitative Analysis of Textiles.[2]

NOTE 2—In subsequent sections of this test method, the term "wool" also signifies mohair or other fibers if the circumstances are applicable.

NOTE 3—For fineness specifications for wool, wool top, mohair, mohair top, alpaca, and cashmere, refer to Specifications D 3991 and D 3992, Specification D 2252, Test Method D 2816.

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[2]

D 584 Test Method for Wool Content of Raw Wool—Laboratory Scale[2]

D 629 Test Methods for Quantitative Analysis of Textiles[2]

D 1060 Practice for Core Sampling of Raw Wool in Packages for Determination of Percentage of Clean Wool Fiber Present[2]

D 1776 Practice for Conditioning Textiles for Testing[2]

D 2252 Specification for Fineness of Types of Alpaca[2]

D 2258 Practice for Sampling Yarn for Testing[2]

D 2816 Test Method for Cashmere Coarse-Hair Content in Cashmere[2]

D 2968 Test Method for Med and Kemp Fibers in Wool and Other Animal Fibers by Microprojection[2]

D 3510 Test Method for Diameter of Wool and Other Animal Fibers by Image Analyzer[3]

D 3991 Specification for Fineness of Wool or Mohair and Assignment of Grade[4]

D 3992 Specification for Fineness of Wool Top or Mohair Top and Assignment of Grade[4]

E 380 Practice for Use of the International System of Units (SI) (the Modernized Metric System)[5]

2.2 *Other Standards:*

Federal Standard, Official Standard of the United States for Grades of Wool, Section 31.0, Measurement Method for Determining Grade of Wool, Section 31.204[6]

IWTO-8-66(E) Method of Determining Wool Fiber Diameter by the Projection Microscope[7]

3. Terminology

3.1 *Definitions:*

3.1.1 *average fiber diameter, n— in wool and other animal fibers*, the average width of a group of fibers when measured on a projected image.

3.1.2 *grade, n—in wool and mohair*, a numerical designation used in classifying wool and mohair in their raw, semi-processed, and processed forms based on average fiber diameter and variation of fiber diameter.

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

4. Summary of Test Method

4.1 This test method describes procedures for sampling various forms of wool and other animal fibers, the reduction of the sample to small test specimens, and the measurement, at high magnification, of the diameter of a number of fibers from

[1] This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.13 on Wool and Wool Felt.

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[2] *Annual Book of ASTM Standards*, Vol 07.01.

[3] Discontinued, see *1986 Annual Book of ASTM Standards*, Vol 07.02.

[4] *Annual Book of ASTM Standards*, Vol 07.02.

[5] *Annual Book of ASTM Standards*, Vol 14.02.

[6] *Service and Regulatory Announcement*, No. 135, U. S. Department of Agriculture, C & MS, April 1966.

[7] International Wool Textile Organization, International Wool Secretariat, Raw Wool Services, Valley Drive, Ilkley, Yorkshire LS29 8PB, England.

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