



# Standard Specification for Fineness of Types of Alpaca<sup>1</sup>

This standard is issued under the fixed designation D 2252; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

## 1. Scope

1.1 This specification is applicable in the classification of alpaca into types according to fineness.

1.2 The values are stated in SI and inch-pound units. The inch-pound units in parentheses are to be regarded as the standard. The values in each system are not exact equivalents, therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

1.3 *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 Textiles<sup>2</sup>

D 2130 Test Method for Diameter of Wool and Other Animal Fibers by Microprojection<sup>2</sup>

## 3. Terminology

3.1 *Definitions:*

3.1.1 *alpaca, n*—the fleece and fiber produced by the alpaca, an animal of the genus *Lama* (*Lama glama pacus*).

3.1.1.1 *Discussion*—There are two varieties of the alpaca animal, the Huacaya and Suri. The Suri produces straighter, finer, and longer fibers, but most alpaca production is of the Huacaya variety. Alpaca is normally classified according to type, representing particular combinations of characteristics appropriate to a specific use, or descriptive of geographic origin, breed or species of animal, or preparation for market (see Appendix X1).

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

<sup>1</sup> This specification 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.

Current edition approved Dec. 10, 1996. Published May 1997. Originally published as D 2252 – 64 T. Last previous edition D 2252 – 85 (1991) <sup>$\epsilon$ 1</sup>.

<sup>2</sup> *Annual Book of ASTM Standards*, Vol 07.01.

3.1.3 *fineness, n—of fibers*, a relative measure of size, diameter, linear density, or mass per unit length expressed in a variety of units.

3.1.3.1 *Discussion*—The fineness of alpaca and other animal fibers is expressed as the average fiber width or average fiber diameter in micrometres ( $\mu\text{m}$ ).

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

## 4. Significance and Use

4.1 This specification for fineness is intended as a guide for production, preparation, and marketing (Note 1) by comparing the average fiber diameter of a measured specimen with the fineness specifications for the various types listed in Table 1. The standard deviation which expresses measured variability of a specimen may be compared with the average shown in Table X2.1.

NOTE 1—Test Method D 2130 does not include any values for the precision to be expected in the testing of alpaca fibers. In an interlaboratory test in which six laboratories each made one test on each of six type samples, HTB-CB, HAXB-CB, HAAB-CB, HAB-CB, HLPB-CL, and HSKB-CL, the coefficient of variation of the average fiber diameters between laboratories, including test variation, was 3.2, 4.7, 3.8, 4.5, 2.2, and 0.93 % for the respective alpaca types.

## 5. Specification

5.1 The fineness of various types of alpaca shall conform to the average fiber diameter limits listed in Table 1.

## 6. Sampling

6.1 Sample the material as directed in Test Method D 2130.

## 7. Test Method

7.1 Test the material as directed in Test Method D 2130. Measure at least the minimum number of fibers specified to attain confidence limits of the mean of  $\pm 0.5 \mu\text{m}$  at a probability level of at least 95 % (see Table A1.4 in Annex A1. to Test Method D 2130).

## 8. Keywords

8.1 alpaca; animal fibers (except wool); fineness

**TABLE 1 Fineness Specifications for Types of Alpaca**

Type	Average Diameter, $\mu\text{m}$
T Extra	under 22.00
T	22.00 to 24.99
X	22.00 to 24.99
AA	25.00 to 29.99
A	30.00 to 35.99
SK	over 30.00
LP	over 30.00

## APPENDIXES

### (Nonmandatory Information)

#### X1. DESCRIPTION AND FINENESS VARIABILITY OF ALPACA TYPES

X1.1 The following are the trade categories for classification of alpaca for market with explanation of the types and symbols used in the commercial classification system:

X1.1.1 *Variety, Species, Breed, or Strain:*

(Symbol and Description)

H—Huacaya

S—Suri

X1.1.2 *Age:*

(Symbol and Description)

T—Tui, first shear, 12 months' growth

A—Adult, 12 months' growth

X1.1.3 *Type:*

(Symbol and Description)

T—Tui, 12 months' age

TSK—Tui, Skirtings

X1.1.3.1 TSK type alpaca may be expected to range from 24 to 28  $\mu\text{m}$  average fiber diameter.

X—Extra Fine Adult

AA—Medium Adult

A—Coarse

SK—Skirtings

LP—Locks and Pieces

X1.1.4 *Colors:*

(Symbol and Description)

B—Blanco-White

LF—Light Fawn

C—Castano-Tan

P—Dark and Piebald

X1.1.5 *Staple Length:*

(Symbol and Description)

CB—3 in. (76 mm) or over, Combing

CL—Under 3 in. (76 mm), Clothing

#### X2. FINENESS VARIABILITY OF CERTAIN ALPACA TYPES

X2.1 Typical standard deviations of the fiber diameters of various types of alpaca are listed in Table X2.1 for information only. These are not part of the specifications.

**TABLE X2.1 Variability of Certain Alpaca Types**

Type	Standard Deviation of the Fiber Diameters, $\mu\text{m}$
T	6.6
X	6.6
AA	7.7
A	10.2
LP	variable

*The American Society for Testing and Materials takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 100 Barr Harbor Drive, West Conshohocken, PA 19428.*

*This standard is copyrighted by ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (<http://www.astm.org>).*