Designation: D 3655 – 02

Standard Performance Specification for Men's and Women's Sliver Knitted Overcoat and Jacket Fabrics[1]

This standard is issued under the fixed designation D 3655; 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 performance specification covers men's and women's sliver knitted overcoat and jacket fabrics composed of any textile fiber or mixture of textile fibers.

1.2 This performance specification is not applicable to knitted fabrics used for interlinings.

1.3 These requirements apply to the length and width directions for those properties where fabric direction is pertinent.

1.4 The following safety hazards caveat pertains only to the test methods portion, Section 7, of this specification: *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[2]

D 2724 Test Methods for Bonded, Fused, and Laminated Apparel Fabrics[2]

D 2905 Practice for Statements on Number of Specimens for Textiles[2]

D 3786 Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics: Diaphragm Bursting Strength Tester Method[3]

D 3787 Test Method for Bursting Strength of Knitted Goods: Constant-Rate-of Traverse (CRT), Ball Burst Test[3]

2.2 *AATCC Methods:*[4]

8 Colorfastness to Crocking: AATCC Crockmeter Method

15 Colorfastness to Perspiration

16 Colorfastness to Light

23 Colorfastness to Burnt Gas Fumes

61 Colorfastness to Washing, Domestic, and Laundering, Commercial Accelerated

107 Colorfastness to Water

116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method

132 Colorfastness to Drycleaning

135 Dimensional Changes in Automatic Home Laundering of Durable Press Woven or Knit Fabrics

172 Colorfastness to Non-Chlorine Bleach in Home Laundering

188 Colorfastness to Chlorine Bleach in Home Laundering

Evaluation Procedure 1 Gray Scale for Color Change

Evaluation Procedure 2 Gray Scale for Staining

Evaluation Procedure 3 AATCC Chromatic Transference Scale

2.3 *Federal Standard:*[5]

16 CFR, Chapter II—Consumer Product Safety Commission, Subchapter D—Flammable Fabrics Act Regulations

NOTE 1—Reference to test methods in this specification give only the permanent part of the designation of ASTM, AATCC, or other test methods. The current editions of each test method cited shall prevail.

3. Terminology

3.1 *Definitions:*

3.1.1 *fabric, sliver-knitted, n*—a single-jersey fabric in which untwisted staple fibers are knitted in at each loop to form a pile surface on the technical back of the jersey structure.

3.2 For definitions of textile terms used in this specification, refer to the individual ASTM and AATCC methods, Dictionary of Common Terms, and Terminology D 123.

4. Significance and Use

4.1 Upon mutual agreement between the purchaser and the seller, woven fabrics intended for this end use should meet all of the requirements listed in Table 1 of this specification.

4.2 It is recognized that for purposes of fashion or aesthetics the ultimate consumer of articles made from these fabrics may find acceptable fabrics that do not conform to all of the requirements in Table 1. Therefore, one or more of the requirements listed in Table 1 may be modified by mutual agreement between the purchaser and the seller.

[1] This specification is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.61 on Apparel.

Current edition approved Jan. 10, 2002. Published April 2002. Originally published as D 3655 – 78. Last previous edition D 3655 – 95.

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

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

[4] Available from American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.

[5] Available from Superintendent of Documents, Government Printing Office, Washington, DC 20402.

TABLE 1 Specification Requirements

NOTE 1—The classes of colorfastness in the AATCC methods referenced in this table are based on a numerical scale of 5 for negligible or no color change or color transfer to 1 for very severe color change or color transfer.

Characteristic	Requirements	Section
Bursting strength (Ball Burst)[A]	70 lbf (311 N) min	7.1
Dimensional Change:		
After 5 launderings	3 % max, in each direction	7.1
After 3 drycleanings	2 % max, in each direction	7.2
Colorfastness:		
Burnt gas fumes, 2 cycles:		7.3.1
Shade change original fabric	Class 4[B] min	
Shade change after 1 laundering or 1 drycleaning	Class 4[B] min	7.3.8
Chlorine Bleach	Class 4[B] min	7.3.9
Non-chlorine Bleach	Class 4[B] min	
Laundering:		7.3.2
Shade change	Class 4[B] min	
Staining	Class 3[C] min	
Drycleaning:		7.3.3
Shade change	Class 4[B] min	
Crocking:		7.3.4
Dry	Class 4[D] min	
Wet	Class 3[D] min	
Water:		7.3.5
Shade change	Class 4[B] min	
Staining	Class 4[C] min	
Perspiration (acid phase)		7.3.6
Shade change	Class 4[B] min	
Staining	Class 3[C] min	
Light (40 AATCC FU) (xenon arc)[A]	Step 4[B] min	7.3.7
Flammability	pass	7.4

[A] More than one method can be used to measure these properties. These methods cannot be used interchangeably since there can be no overall correlation between them (see Note 2, Note 3, and Note 6).
[B] AATCC Gray Scale for Color Change.
[C] AATCC Gray Scale for Staining.
[D] AATCC Chromatic Transference Scale.

4.2.1 In such cases, any references to the specification shall specify that: This fabric meets ASTM Specification D 3655 except for the following characteristic(s).

4.3 Where no prepurchase agreement has been reached between the purchaser and the seller, and in case of controversy, the requirements listed in Table 1 are intended to be used as a guide only. As noted in 4.2, ultimate consumer demands dictate varying performance parameters for any particular style of fabric.

4.4 The uses and significance of particular properties and test methods are discussed in the appropriate sections of the specified test methods.

5. Specification Requirements

5.1 The properties of fabrics for men's and womens' sliver knitted overcoats and jackets shall conform to the specification requirements in Table 1.

6. Sampling

6.1 Unless otherwise agreed upon, as when specified in an applicable material specification, take the number of specimens directed in each of the applicable test methods.

6.1.1 If there has been no prior agreement and the test method does not specify the number of specimens, use the procedures in Practice D 2905 to determine the number of specimens, such that the user may expect at the 95 % probability level that the test result is no more than 5 % of the average above or below the lot average (that is, the average that would be obtained by applying this method to the entire lot) when using a reliable estimate of variability of individual observations on similar materials in the user's laboratory under conditions of single-operator precision.

7. Test Methods (See Note 1)

7.1 *Bursting Strength*—Determine the bursting strength, in the standard atmosphere for testing textiles, as directed in Test Method D 3787, using an approved type of constant-rate-of-traverse (CRT) machine equipped with a bursting attachment, or Test Method D 3786, using an approved type of diaphragm bursting tester, as agreed upon between the purchaser and the seller.

NOTE 2—There is no overall relation between the results obtained with the CRT machine equipped with a bursting attachment and the diaphragm bursting tester. Consequently, these two bursting testers cannot be used interchangeably. In case of controversy, Test Method D 3787 shall prevail.

NOTE 3—The precision of the ball bursting method using the CRT machine equipped with a bursting attachment and the precision of the diaphragm bursting method are being established by Subcommittee D13.59. The methods are accordingly not recommended for acceptance testing unless preceded by an interlaboratory check test in the laboratory of the purchaser and the laboratory of the seller using randomized replicate specimens of the material to be evaluated.

7.2 *Dimensional Change*:

7.2.1 *Laundering*—Determine the maximum dimensional change after five launderings as directed in the applicable procedure in AATCC Method 135 or as agreed upon between the purchaser and the seller (Note 3).

7.2.1.1 The wash conditions and drying procedure shall be as specified by the seller.

7.2.2 *Drycleaning*—Determine the maximum dimensional change after three drycleanings in accordance with 10.1.1 through 10.1.4 of Test Methods D 2724 or as agreed upon between the purchaser and the seller.

NOTE 4—Launderable fabrics are expected to be drycleanable except where all or part of the fabric is not drycleanable and is so labeled. For example, the fabric could contain a functional finish soluble in the solvent, or the fiber could be degraded by the solvent, which would be the case with poly(vinyl chloride) fiber. "Drycleanable" goods are to be drycleaned only.

7.3 *Colorfastness*:

7.3.1 *Burnt Gas Fumes*—Determine the colorfastness to burnt gas fumes on the original fabric and after one laundering or one drycleaning as directed in AATCC Method 23.

NOTE 5—Washing conditions shall be the same as those used in 7.2.1.1. Drycleaning conditions shall be the same as those used in 7.2.2.

7.3.2 *Laundering*—Determine the colorfastness to laundering as directed in the applicable procedure of AATCC Method 61. The test conditions shall be as specified by the seller (Note 3).

7.3.3 *Colorfastness to Drycleaning*—Determine the colorfastness to drycleaning as directed in AATCC Method 132 (Note 3).

7.3.4 *Colorfastness to Crocking*—Determine the colorfastness to dry and wet crocking as directed in AATCC Method 8

for solid shades and AATCC Method 116 for prints or as agreed upon between the purchaser and the seller.

7.3.5 *Colorfastness to Water*—Determine the colorfastness to water as directed in AATCC Method 107.

7.3.6 *Colorfastness to Perspiration*— Determine the colorfastness to perspiration as directed in AATCC Method 15.

7.3.7 *Colorfastness to Light*—Determine the colorfastness to light as directed in AATCC Method 16.

NOTE 6—There are distinct differences in spectral distribution between the various types of machines listed in AATCC Method 16, with no overall correlations between them. Consequently, these machines cannot be used interchangeably. In case of controversy, results obtained with the Water Cooled Xenon Arc machine listed in Option E shall prevail.

7.3.8 *Colorfastness to Chlorine Bleach*— Determine the colorfastness to chlorine bleach as directed in AATCC Method 188.

7.3.9 *Colorfastness to Perspiration*— Determine the colorfastness to non-chlorine bleach as directed in AATCC Method 172.

7.4 *Flammability*—The flammability requirements shall be as agreed upon between the purchaser and the seller, provided they meet or exceed those of Part 1610 of the Flammable Fabrics Act Regulations (see 2.3).

8. Keywords

8.1 jacket; overcoat; sliver knitted