



Standard Performance Specification for Men's and Women's Sliver Knitted Overcoat and Jacket Fabrics¹

This standard is issued under the fixed designation D3655; 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:²

D123 Terminology Relating to Textiles

D2724 Test Methods for Bonded, Fused, and Laminated Apparel Fabrics

D2905 Practice for Statements on Number of Specimens for Textiles (Withdrawn 2008)³

D3786 Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method

D3787 Test Method for Bursting Strength of Textiles—Constant-Rate-of-Traversal (CRT) Ball Burst Test

D7022 Terminology Relating to Apparel³

2.2 AATCC Methods:⁴

8 Colorfastness to Crocking: Crockmeter Method

15 Colorfastness to Perspiration

16.3 Colorfastness to Light

23 Colorfastness to Burnt Gas Fumes

61 Colorfastness to Laundering: Accelerated

107 Colorfastness to Water

116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method

132 Colorfastness to Drycleaning

135 Dimensional Changes of Fabrics After Home Laundering

172 Colorfastness to Powdered Non-Chlorine Bleach in Home Laundering

188 Colorfastness to Sodium Hypochlorite Bleach in Home Laundering

Evaluation Procedure 1 Gray Scale for Color Change

Evaluation Procedure 2 Gray Scale for Staining

Evaluation Procedure 8 AATCC 9-Step 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 For all terminology related to Apparel see Terminology D7022.

3.1.1 The following terms are relevant to this standard: fabric, sliver knitted.

3.2 For terms relating to chemical or colorfastness testing, refer to specific AATCC methods. For definitions of all other textile terms see Terminology D123.

⁴ Available from American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709, <http://www.aatcc.org>.

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

¹ This performance 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 Feb. 1, 2014. Published March 2014. Originally approved in 1978. Last previous edition approved in 2013 as D3655 – 13^{ε1}. DOI: 10.1520/D3655-14.

² 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.

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

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.

4.2.1 In such cases, any references to the specification shall specify that: This fabric meets ASTM Specification D3655 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.

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
<i>Bursting strength</i> (Ball Burst) ^A	70 lbf (311 N) min	7.1
<i>Dimensional Change:</i>		
After 5 launderings	3 % max, in each direction	7.1
After 3 drycleanings	2 % max, in each direction	7.2
<i>Colorfastness:</i>		
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
Sodium Hypochlorite Bleach	Class 4 ^B min	7.3.9
Powdered Non-chlorine Bleach	Class 4 ^B min	
Laundering: ^E		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: ^E		7.3.4
Dry	Class 4 ^D min	
Wet	Class 3 ^D min	
Water: ^E		7.3.5
Shade change	Class 4 ^B min	
Staining	Class 4 ^C min	
Perspiration (acid phase) ^F		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
<i>Flammability</i>	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 7**).

^B AATCC Gray Scale for Color Change.

^C AATCC Gray Scale for Staining.

^D AATCC 9-Step Chromatic Transference Scale.

^E It has been reported that the results for staining, obtained by standard AATCC Test Methods, on fabrics dyed to dark shades that contain a combination of polyester and spandex, or their blends, may not show the full staining propensity of such fabrics in consumer use. It is, therefore, recommended that the staining results obtained by these tests not be used for acceptance testing of such fabrics.

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 **D2905** 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 **D3787**, using an approved type of constant-rate-of-traverse (CRT) machine equipped with a bursting attachment, or Test Method **D3786**, 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 **D3787** 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 **D2724** 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).

NOTE 6—It has been reported that the results for staining, obtained by standard AATCC Test Methods, on fabrics dyed to dark shades that contain a combination of polyester and spandex, or their blends, may not show the full staining propensity of such fabrics in consumer use. It is, therefore, recommended that the staining results obtained by these tests not be used for acceptance testing of such fabrics

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 (see Note 6).

7.3.5 *Colorfastness to Water*—Determine the colorfastness to water as directed in AATCC Method 107 (see Note 6).

7.3.6 *Colorfastness to Perspiration*—Determine the colorfastness to perspiration as directed in AATCC Method 15 (see Note 6).

7.3.7 *Colorfastness to Light*—Determine the colorfastness to light as directed in AATCC Method 16.3.

NOTE 7—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 3 shall prevail.

7.3.8 *Colorfastness to Sodium Hypochlorite Bleach*—Determine the colorfastness to sodium hypochlorite bleach as directed in AATCC Method 188.

7.3.9 *Colorfastness to Powdered Non-Chlorine Bleach*—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 jackets; overcoats; sliver knitted

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