



Standard Performance Specification for Women's and Girls' Woven Dress and Blouse Fabrics¹

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1. Scope

1.1 This performance specification covers woven women's and girls' dress and blouse fabrics composed of any textile fiber or mixture of textile fibers.

1.2 This performance specification is not applicable to woven 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 When a fabric requires special treatment, specific methods will be described as they are developed for that material, and such special tests will have precedence over these general requirements.

1.5 The following safety hazards caveat pertains only to the test method described in 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 Textiles²
- D 434 Test Method for Resistance to Slippage of Yarns in Woven Fabrics Using a Standard Seam²
- D 1424 Test Method for Tear Resistance of Woven Fabrics by Falling-Pendulum (Elmendorf) Apparatus²
- D 2261 Test Method for Tearing Strength of Woven Fabrics by the Tongue (Single Rip) Method (Constant Rate-of-Extension Tensile Testing Machine)²
- D 2262 Test Method for Tearing Strength of Woven Fabrics by the Tongue (Single Rip) Method (Constant Rate-of-Traversal Tensile Testing Machine)²
- D 2724 Test Methods for Bonded, Fused, and Laminated Apparel Fabrics²
- D 2905 Practice for Statements on Number of Specimens for Textiles²
- D 5034 Test Method for Breaking Force and Elongation of

Textile Fabrics (Grab Test)³

2.2 AATCC Test 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
- 96 Dimensional Changes in Laundering of Woven and Knitted Textiles Except Wool
- 116 Colorfastness to Crocking: Rotary Vertical, Crockmeter Method
- 124 Appearance of Durable Press Fabrics After Repeated Home Launderings
- 132 Colorfastness to Drycleaning
- 135 Dimensional Changes in Automatic Home Laundering of Durable Press Woven or Knit Fabrics
- Evaluation Procedure No. 1 Gray Scale for Color Change
- Evaluation Procedure No. 2 Gray Scale for Staining
- Evaluation Procedure No. 3 AATCC Chromatic Transference Scale

2.3 Federal Standards:

- 16 CFR 1610 Standard for Flammability of Clothing Textiles⁵
- 16 CFR, Chapter II—Consumer Product Safety Commission, Subchapter D—Flammable Fabrics Act Regulations⁵
- 2.4 *Military Standard:*
MIL-STD-105D Sampling Procedures and Tables for Inspection by Attributes⁶

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 Definition:

3.1.1 *sheer, n*—a fabric that is transparently thin or diaphanous.

3.2 For definitions of other textile terms used in this specification, refer to the individual ASTM and AATCC test

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

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

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

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

⁶ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

TABLE 1 Specification Requirements for Women's and Girls' Woven Dress and Blouse Fabrics

NOTE 1—Class for colorfastness and DP rating is based on a numerical scale of 5 for negligible or no color change, color transfer, or wrinkle to 1 for severe color change, color transfer, or wrinkle.

Characteristic	Requirements		Section
	Sheer Fabrics	Nonsheer Fabrics	
Breaking strength (load) (CRT)	67 N (15 lbf), min	111 N (25 lbf), min	7.1
Resistance to yarn slippage, ¼-in. (6-mm) separation	45 N (10 lbf), min	67 N (15 lbf), min	7.2
Tear strength	4.5 N (1.0 lbf), min	6.7 N (1.5 lbf), min	7.3
Dimensional change:			
After 5 launderings	3.0 % max	3.0 % max	7.4.2
After 3 dry cleanings	2.0 % max	2.0 % max	7.4.3
Pressing	1.0 % max	1.0 % max	7.4.1
Colorfastness to:			
Laundering:			7.5.1
Shade change	Class 4 ^A min	Class 4 ^A min	
Staining	Class 3 ^B min	Class 3 ^B min	
Dry cleaning:			7.5.2
Shade change	Class 4 ^A min	Class 4 ^A min	
Burnt gas fumes:	Class 4 ^A min	Class 4 ^A min	7.5.3
Alteration in shade: 1 cycle on original and after 1 washing or 1 dry cleaning, or both	Class 4 ^A min	Class 4 ^A min	7.5.3
Crocking:			7.5.4
Dry	Class 4 ^C min	Class 4 ^C min	
Wet	Class 3 ^C min	Class 3 ^C min	
Perspiration:			7.5.5
Shade change	Class 4 ^A min	Class 4 ^A min	
Staining	Class 3 ^B min	Class 3 ^B min	
Light (xenon-arc):			7.5.6
20 AATCC fading units	Step 4 ^A min	Step 4 ^A min	
Fabric appearance (see 7.6.1.1)	DP 3.5 ^D min	DP 3.5 ^D min	7.6
Flammability	Class 1 or Class 2	Class 1 or Class 2	7.7

^A AATCC Gray Scale for Color Change.

^B AATCC Gray Scale for Staining.

^C AATCC Chromatic Transference Scale.

^D For durable-press fabrics only.

methods and to Terminology D 123. Definitions found in a dictionary of common terms are suitable for terms used in this specification.

4. Specification Requirements

4.1 The properties of woven fabric for women's and girls' dresses and blouses shall conform to the specification requirements in Table 1.

5. Significance and Use

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

5.2 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 supplier.

5.2.1 In such cases, any references to the specification shall specify that: "This fabric meets ASTM Specification D 4038 except for the following characteristic(s)."

5.3 Where no prepurchase agreement has been reached between the purchaser and the supplier, and in case of controversy, the requirements listed in Table 1 are intended to be used as a guide only. As noted in 5.2, ultimate consumer demands dictate varying performance parameters for any particular style of fabric.

5.4 The significance and use of particular properties and test methods are discussed in the appropriate sections of the

specified test methods.

6. Sampling

6.1 *Acceptance Testing Lot*—Unless there is prior agreement consider as a lot for acceptance testing all material of a single item received as a single shipment.

6.2 *Lot Sample*—As a lot sample for acceptance testing, take at random the number of rolls as directed in an applicable specification or other agreement between the purchaser and the supplier, such as an agreement to use MIL-STD-105D.

6.3 *Laboratory Sample*—From each roll or piece in the lot sample, cut two laboratory samples the full width of the fabric and at least 375 mm (15 in.) along the selvage.

6.4 *Test Specimens*—Take the number of specimens directed in each of the applicable test methods. Perform the tests on the fabric as it will reach the customer. Any "partially finished" or "post-finished" fabrics should be processed in accordance with the fabric manufacturer's instructions.

6.5 If the applicable test method does not specify the number of specimens, use the procedures in Practice D 2905 to determine the number of specimens per laboratory sampling unit. Use (1) a reliable estimate of the variability of individual observations on similar materials in the user's laboratory, (2) a 95 % probability level, and (3) an allowable difference of 5 % of the average between the test results on laboratory sampling units and the average for the laboratory sampling unit. The average for a laboratory sampling unit is the average that would be obtained by applying the test method to all of the potential specimens from that laboratory sampling unit.

7. Test Methods (see Note 1)

7.1 *Breaking Force*—Determine the dry breaking force, in the standard atmosphere for testing textiles, as directed in Test Method D 5034, using a constant rate of traverse (CRT) tensile testing machine with the speed of the pulling clamp at 300 ± 10 mm (12 ± 0.5 in.)/min.

NOTE 2—If preferred, the use of a constant-rate-of-extension (CRE) testing machine is permitted. The crosshead speed should be as agreed upon between the purchaser and the supplier. There may be no overall correlation between the results obtained with the CRT machine and the CRE machine, consequently, these two breaking load testers cannot be used interchangeably. In case of controversy, the CRT machine shall prevail.

7.2 *Resistance to Yarn Slippage*—Determine the resistance to yarn slippage as directed in Test Method D 434.

NOTE 3—The precision of Test Method D 434 has not been established, and it may not be suitable for fabrics with low yarn counts in terms of ends and picks per inch (see 5.2).

7.3 *Tear Strength*—Determine the tear strength as directed in Test Method D 1424.

NOTE 4—If preferred, the use of Test Methods D 2261 or D 2262 is permitted with existing requirements as given in this specification. There may be no overall correlation between the results obtained with the tongue tear machines and the Elmendorf machine. Consequently, these three testers cannot be used interchangeably. In case of controversy, Test Method D 1424 shall prevail.

7.4 Dimensional Change:

7.4.1 *Pressing and Finishing During Manufacturing*⁷—Mark the specimen(s) as directed in 4.3.1 of AATCC Test Method 135. Press the specimen(s) as agreed upon between the buyer and the supplier with respect to the type of equipment and conditions of test. Measure the specimen(s) and calculate the dimensional change as directed in AATCC Test Method 135.

7.4.1.1 If no agreement has been made between the purchaser and the supplier, press the specimen(s) using a flat-bed press as follows:

- (1) Five seconds steam with head up.
- (2) Five seconds dry hot press with head down, 293 to 303°F (145 to 151°C) at the press.
- (3) Five seconds vacuum, steam off, head down.
- (4) Five seconds vacuum, steam off, head up.

NOTE 5—It is recognized that fabrics for this end use are primarily hand pressed or pressed on forms. However, no standard test method is available to determine the behavior of fabric under those test conditions.

7.4.2 *Laundering*—Determine the maximum dimensional change after five launderings as directed in the applicable procedure in AATCC Test Method 135 or as agreed upon between the purchaser and the supplier.

7.4.2.1 The wash conditions and drying procedure shall be as specified by the supplier.

NOTE 6—Specimens prepared for 7.4.1 may be used for 7.4.2-7.4.3 as desired. When this is done, the dimensional change due to laundering or

dry cleaning is calculated using Eq 1. The dimensional change to pressing and finishing is determined on the fabric as it will reach the user. It is not additive to the dimensional change to laundering or drycleaning of the fabric as it will reach the consumer (see 6.1).

$$\text{Percent Dimensional Change} = 100 (D_1 - D_2)/D_2 \quad (1)$$

where:

D_1 = measurement after laundering or dry cleaning, and

D_2 = measurement after pressing and finishing.

7.4.3 *Dry Cleaning*—Determine the maximum dimensional change after 3 dry cleanings in accordance with Test Methods D 2724.

7.5 Colorfastness:

7.5.1 *Laundering*—Determine the colorfastness to laundering as directed in AATCC Test Method 61. The test conditions shall be as specified by the supplier.

7.5.2 *Dry Cleaning*—Determine the colorfastness to dry cleaning as directed in AATCC Test Method 132.

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

NOTE 7—Washing conditions shall be the same as those used in 7.4.2.1. Dry-cleaning conditions shall be the same as those used in 7.4.3.

7.5.4 *Crocking*—Determine the colorfastness to dry and wet crocking as directed in AATCC Test Method 8 for solid shades and AATCC Test Method 116 for prints or as agreed upon between the purchaser and the supplier.

7.5.5 *Perspiration*—Determine the colorfastness to perspiration as directed in AATCC Test Method 15.

7.5.6 *Light*—Determine the colorfastness to light as directed in AATCC Test Method 16.

NOTE 8—There are distinct differences in spectral distribution between the various types of machines listed in AATCC Test 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.

7.6 *Fabric Appearance After Repeated Home Launderings*—Determine the fabric appearance as directed in AATCC Test Method 124 after laundering using the wash-and-wear cycle or the normal cycle as agreed upon between the purchaser and the supplier as specified in 7.4.2.1 for washable fabrics or after dry cleaning as specified in 7.4.3 for dry-cleanable fabrics.

7.6.1 For fabrics not intended for use in durable-press products, determine the fabric smoothness after pressing as specified in AATCC Test Method 96.

7.6.1.1 The fabric smoothness (durable-press rating) of such fabrics and the durable-press rating of dry-cleaned fabrics shall have decreased no more than 1/2 durable press rating from that of the fabric before it is laundered or dry-cleaned.

7.7 *Flammability*—The flammability requirements shall be as agreed upon between the purchaser and the supplier, provided they meet or exceed those of Part 1610 of the Flammable Fabric Act Regulations.

8. Keywords

8.1 blouse; dress; fabric; performance; specification

⁷ The development of a standard test method has been referred to Subcommittee D13.59 on Fabric Test Methods, General.

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