



Designation: D 4114 – 02

Standard Performance Specification for Woven Flat Lining Fabrics for Women's and Girls' Apparel¹

This standard is issued under the fixed designation D 4114; 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 woven flat fabrics comprised of any textile fiber or mixture of fibers to be used as linings for women's and girls' apparel.

1.2 This performance specification is not applicable to woven pile, woven fusible, fire-bonded fusible, sliver-knit pile, and sheepskin lining fabrics.

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

1.4 The following precautionary statement 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

- D 123 Terminology Relating to Textiles
- D 434 Test Method for Resistance to Slippage of Yarns in Woven Fabrics Using a Standard Seam
- D 1336 Test Method for Distortion of Yarn in Woven Fabrics
- D 1424 Test Method for Tear Resistance of Woven Fabrics by Falling-Pendulum (Elmendorf) Apparatus
- D 2261 Test Method for Tearing Strength of Woven Fabrics by the Tongue (Single Rip) Method (Constant-Rate-of-Extension Tensile Testing Machine)
- D 2262 Test Method for Tearing Strength of Woven Fabrics by the Tongue (Single Rip) Method (Constant-Rate-of-Traverse Tensile Testing Machine)
- D 2724 Test Methods for Bonded, Fused, and Laminated Apparel Fabrics

D 5034 Test Method for Breaking Force and Elongation of Textile Fabrics (Grab Test)

2.2 AATCC Test Methods:³

- 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
 - 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 Woven or Knit Fabrics
 - 172 Colorfastness to Non-Chlorine Bleach in Home Laundering
 - 188 Colorfastness to Chlorine Bleach in Home Laundering Evaluation Procedure No. 1 Gray Scale for Color Change Evaluation Procedure No. 2 Gray Scale for Staining Evaluation Procedure No. 3 AATCC Chromatic Transfer Scale
- #### 2.3 Federal Standard:⁴
- 16 CFR, Chapter II—Consumer Product Safety Commission Subchapter D—Flammable Fabrics Act Regulations
- #### 2.4 Military Standard:⁵
- MIL-STD-105D Sampling Procedures and Tables for Inspection by Attributes

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:

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

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

⁴ Available from Superintendent of Documents, Government Printing Office, Washington, DC 20402.

⁵ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

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

3.2 Definitions found in a dictionary of common terms are suitable for this specification.

4. Specification Requirements

4.1 The properties of woven flat fabrics, to be used as linings in women's and girls' apparel, shall conform to the specification requirements in Table 1.

5. Significance and Use

5.1 Upon 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 upon 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 4114 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 uses and significance of particular properties and methods are discussed in the appropriate sections of the specified test methods.

6. Sampling

6.1 *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.

6.2 *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.

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) tensile-testing machine is permitted. The crosshead speed should be as

TABLE 1 Specification Requirements^A

NOTE 1—Class for color change, color transfer, 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
<i>Breaking strength (load)(CRT)</i>	111 N (25 lbf), min	7.1
<i>Yarn slippage</i>	6.3-mm (¼-in.) separation at 67 N (15 lbf), min	7.2
<i>Tongue-tear strength</i>	6.7 N (1.5 lbf), min	7.3
<i>Yarn distortion</i>		7.4
Satis	2.5 mm (0.10 in.), max	7.4
All other	1 mm (0.05 in.), max	
<i>Dimensional change:</i>		
After five launderings	3 %, max	7.5.1
After three dry cleanings	2% , max	7.5.2
<i>Colorfastness:</i>		
Burnt gas fumes—2 cycles:		7.6.1
Shade change, original fabric	Class 4 ^B , min	
Shade change after one laundering or one dry cleaning	Class 4 ^B , min	
Chlorine Bleach	Class 4 ^B , min	7.6.7
Non-Chlorine Bleach	Class 4 ^B , min	7.6.8
Laundering:		7.6.2
Shade change	Class 4 ^B , min	
Staining	Class 3 ^C , min	
Dry cleaning:		7.6.3
Shade change	Class 4 ^B , min	
Crocking:		7.6.4
Dry	Class 4 ^D , min	
Wet	Class 3 ^D , min	
Perspiration:		7.6.5
Shade change	Class 4 ^B , min	
Staining	Class 3 ^C , min	
Light (10 AATCC FU)(xenon-arc)	Step 4 ^B , min	7.6.6
<i>Fabric appearance (see 7.7.1.1)</i>	DP 3.5 ^E , min	7.7
<i>Flammability</i>	pass	7.8

^A There is more than one method that can be used to measure breaking strength (load), tear strength, and lightfastness. These methods cannot be used interchangeably since there may be no overall correlation between them (see Note 2, Note 4, and Note 7).

^B AATCC Gray Scale for Color Change.

^C AATCC Gray Scale for Staining.

^D AATCC Chromatic Transference Scale.

^E For durable-press fabrics only.