



Designation: D 3691 – 95a (Reapproved 2001)

Standard Performance Specification for Woven, Lace, and Knit Household Curtain and Drapery Fabrics¹

This standard is issued under the fixed designation D 3691; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This performance specification covers the requirements for all knit, lace, foam back, stitch-bonded, conventional weights, and sheer woven fabrics to be used in the manufacture of curtains and draperies.

1.2 This performance specification is not applicable to fabrics made of glass.

1.3 For those properties where fabric direction is pertinent, these requirements apply to the length and width directions for woven fabric and to both the wale and course directions for knit fabric.

1.4 *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 231 Methods of Testing Tolerances for Knit Goods³
- D 1336 Test Method for Distortion of Yarn in Woven Fabrics²
- D 1424 Test Method for Tear Resistance of Woven Fabrics by Falling-Pendulum (Elemendorf) Apparatus²
- D 2262 Test Method for Tearing Strength of Woven Fabrics by the Tongue (Single Rip) Method (Constant-Rate-of-Traverse 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)²

2.2 AATCC Test Methods⁴

- 8 Colorfastness to Crocking: AATCC Crockmeter Method
- 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 Fabric After Repeated Home Laundering
- 129 Colorfastness to Ozone in the Atmosphere Under High Humidities
- 132 Colorfastness to Dry Cleaning
- 135 Dimensional Changes in Automatic Home Laundering of Durable Press Woven or Knit Fabric
- Evaluation Procedure 1 Gray Scale for Color Change
- Evaluation Procedure 2 Gray Scale for Staining
- Evaluation Procedure 3 AATCC Chromatic Transference Scale

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 *sheer, n*—a woven fabric that is transparently thin or diaphanous.
- 3.2 For definitions of other textile terms used in this specification, refer to Terminology D 123 and to the Technical Manual of the American Association of Textile Chemists and Colorists.⁴

4. Performance Requirements

4.1 The properties of woven, lace, and knit fabrics for curtains and draperies shall conform to the specification requirement in Table 1.

5. Significance and Use

5.1 Woven lace and knit fabrics should meet all of the

¹ This specification is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.63 on Home Furnishings.

Current edition approved Dec. 10, 1995. Published March 1996. Originally published as D 3691 – 78. Last previous edition D 3691 – 95.

² *Annual Book of ASTM Standards*, Vol 07.02.

³ *Discontinued*—See 1979 *Annual Book of ASTM Standards*, Part 32.

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

TABLE 1 Performance Requirements

Characteristics	Knit and Lace	Sheer (woven)	Foam Back, Stitch Bonded, and Conventional Weights (woven)	Section
Breaking strength (load), (CRT method), in both directions ^A	...	67 N (15 lbf), min	89 N (20 lbf), min	7.1
Bursting strength (ball burst) ^A	138 kPa (20 lbf/in. ²), min	...	...	7.2
Tear strength (tongue tear), in both directions ^A	...	4.4 N (1 lbf), min	6.7 N (1.5 lbf), min	7.3
Dimensional change:				
After 5 launderings in both directions	3.0 % max	3.0 % max	3.0 % max	7.4.1
After 3 dry cleanings in both directions	3.0 % max	3.0 % max	3.0 % max	7.4.2
Distortion of yarn:				
1-lbf load	...	2.54 mm (0.1 in.), max	...	7.5
2-lbf load	...	...	2.54 mm (0.1 in.), max	
Colorfastness to laundering: ^B				
Alteration in shade	Class 4 ^C min	Class 4 ^C min	Class 4 ^C min	7.6.1
Staining	Class 3 ^D min	Class 3 ^D min	Class 3 ^D min	
Colorfastness to dry cleaning:				
Alteration in shade	Class 4 ^C min	Class 4 ^C min	Class 4 ^C min	7.6.2
Burnt gas fumes, 2 cycles:				
Alteration in shade	Class 4 ^C min	Class 4 ^C min	Class 4 ^C min	7.6.3
After 1 refurbishing	Class 4 ^C min	Class 4 ^C min	Class 4 ^C min	
Crocking:				
Dry	Class 4 ^E min	Class 4 ^E min	Class 4 ^E min	7.6.4
Wet	Class 3 ^E min	Class 3 ^E min	Class 3 ^E min	
Light (60 AATCC FU), xexon ^A	Step 4 ^C min	Step 4 ^C min	Step 4 ^C min	7.6.5
Ozone, 1 cycle	Class 4 ^C min	Class 4 ^C min	Class 4 ^C min	7.6.6
Fabric appearance	DP 3.5 ^F min	DP 3.0 min	DP 3.5 min	7.7
Retention of hand, character, and appearance	pass	pass	pass	7.8
Durability of back coating	pass	pass	pass	7.9
Flammability	pass	pass	pass	7.10
Light degradation ^G	...	...	...	7.11

^A There is more than one standard test method that can be used to measure breaking strength, bursting strength, tear strength, and lightfastness. These test methods cannot be used interchangeably since there may be no overall correlation between them (see Note 2, Note 3, Note 4, Note 5, and Note 9).

^B Class in colorfastness and DP rating is based on a numerical scale of 5.0 for negligible color change, color transfer, or wrinkling to 1.0 for very severe color change, color transfer, or wrinkling. The numerical rating in Table 1 or higher is acceptable.

^C AATCC Gray Scale for Color Change.

^D AATCC Gray Scale for Staining.

^E AATCC Chromatic Transference Scale.

^F For durable-press fabrics only.

^G The development of a standard method has been referred to the American Association of Textile Chemists and Colorists: <http://www.aatcc.org/standards/astm-d3691-95a2001>

requirements in Table 1 to be suitable for use in the manufacture of curtains and draperies.

5.2 It is recognized that for purposes of fashion or aesthetics, the ultimate consumer of articles made from these fabrics may find acceptable some fabrics that do not conform to all of the requirements in Table 1. For example, the fabric could be dyed in shades that do not meet the requirement in Table 1 for colorfastness to light, yet be acceptable to the ultimate consumer because the shade is fashionable. In such cases, one or more of the requirements may be modified by mutual agreement between the purchaser and the supplier.

5.2.1 If any of the requirements in Table 1 are modified by mutual agreement between the purchaser and the supplier, any reference to the specification shall specify that: "This fabric meets ASTM Specification D 3691 except for the following characteristic(s)."

5.3 The uses and significance of particular properties are discussed in the appropriate sections of the specific methods.

6. Sampling

6.1 Tests shall be performed on the fabric as it will reach the user.

6.2 Unless otherwise agreed upon, as when specified in an applicable material specification, take the number of specimens

specified in each of the applicable test methods.

6.2.1 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 not more than 5 % of the average above or below the true average (that is, a theoretical average from an infinite number of observations) 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 (Note 1)

7.1 *Breaking Force (Woven Fabrics Only)*—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 a constant-rate-of-extension (CRE) tensile testing machine may be used. 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 with the CRE machine. Consequently, these two breaking load testers cannot be