Designation: D3691/D3691M – 19

Standard Performance Specification for Woven, Lace, and Knit Household Curtain and Drapery Fabrics[1]

This standard is issued under the fixed designation D3691/D3691M; 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 U.S. 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 applicable to all fabrics except those 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 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.5 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D231 Methods of Testing Tolerances for Knit Goods; Replaced by D 3887 (Withdrawn 1980)[3]

D1336 Test Method for Distortion of Yarn in Woven Fabrics

D1424 Test Method for Tearing Strength of Fabrics by Falling-Pendulum (Elmendorf-Type) Apparatus

D2261 Test Method for Tearing Strength of Fabrics by the Tongue (Single Rip) Procedure (Constant-Rate-of-Extension Tensile Testing Machine)

D2724 Test Method for Bond Strength of Bonded, Fused, and Laminated Apparel Fabrics

D5034 Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)

D7023 Terminology Relating to Home Furnishings

2.2 *AATCC Standards*[4]

TM8 Colorfastness to Crocking: Crockmeter Method

TM16.3 Colorfastness to Light: Xenon Arc

TM23 Colorfastness to Burnt Gas Fumes

TM61 Colorfastness to Laundering: Accelerated

TM116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method

TM124 Smoothness Appearance of Fabrics After Home Laundering

TM129 Colorfastness to Ozone in the Atmosphere Under High Humidities

TM132 Colorfastness to Drycleaning

TM135 Dimensional Changes of Fabrics after Home Laundering

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

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

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

TM172 Colorfastness to Powdered Non-Chlorine Bleach in Home Laundering
TM188 Colorfastness to Sodium Hypochlorite Bleach in Home Laundering
EP1 Gray Scale for Color Change
EP2 Gray Scale for Staining
EP8 Chromatic Transference Scale, 9-Step
EP9 Visual Assessment of Color Difference of Textiles

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:* For definitions of other textile terms used in this specification, refer to Terminology D7023 and to the Technical Manual of the American Association of Textile Chemists and Colorists.[4]

4. Significance and Use

4.1 Fabrics intended for this end-use should meet all of the requirements listed in Table 1.

4.2 It should be recognized that fabric can be produced utilizing an almost infinite number of construction variables (e.g., type of fibers, percentage of fibers, yarn twist, yarn number, warp and pick count, chemical and mechanical finished). Additionally, fashion and aesthetics dictate that the ultimate consumer may find acceptable articles made from fabrics that do not conform to all of the requirements in Table 1.

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	5.1
Bursting strength (ball burst)[A]	138 kPa (20 lbf/in.^{2}), min	...	...	5.2
Tear strength (tongue tear), in both directions[A]	...	4.4 N (1 lbf), min	6.7 N (1.5 lbf), min	5.3
Dimensional change:				
After 5 launderings in both directions	3.0 % max +0.0%	3.0 % max 0.0%	3.0 % max +0.0%	5.4.1
After 3 dry cleanings in both directions	3.0 % max +0.0%	3.0 % max +0.0%	3.0 % max +0.0 %	5.4.2
Distortion of yarn:				
1-lbf load	...	2.54 mm (0.1 in.), max	...	5.5
2-lbf load	...	...	2.54 mm (0.1 in.), max	
Colorfastness to laundering:[B]				
Shade Change	Class 4[C] min	Class 4[C] min	Class 4[C] min	5.6.1
Staining	Class 3[D] min	Class 3[D] min	Class 3[D] min	
Colorfastness to dry cleaning:				
Shade change	Class 4[C] min	Class 4[C] min	Class 4[C] min	5.6.2
Burnt gas fumes, 2 cycles:				
Shade change	Class 4[C] min	Class 4[C] min	Class 4[C] min	5.6.3
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	5.6.4
Wet	Class 3[E] min	Class 3[E] min	Class 3[E] min	
Light (60 AATCC FU), xenon[A]	Step 4[C] min	Step 4[C] min	Step 4[C] min	5.6.5
Ozone, 1 cycle	Class 4[C] min	Class 4[C] min	Class 4[C] min	5.6.6
Fabric appearance	SA 3.5[F] min	SA 3.0 min	SA 3.5 min	5.7
Retention of hand, character, and appearance	No significant change	No significant change	No significant change	5.8
Durability of back coating	No significant change	No significant change	No significant change	5.9
Flammability	pass	pass	pass	5.10
Light degradation[G]	...	...	...	5.11

[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 SA 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 9-Step 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.