



Designation: D6554-00

Standard Performance Specification for Designation: D 6554/ D6554M – 09

Standard Specification for 100 % Cotton Denim Fabrics¹

This standard is issued under the fixed designation D 6554/D6554M; 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 specification covers performance requirements for 100% cotton woven denim fabrics used in the manufacture of jeans, casual apparel, work clothing, and outerwear.~~

~~1.2 This performance specification is not applicable to woven denim fabrics used as interlinings or protective clothing.~~

~~1.3 This standard covers the performance of denim fabric on rolls ready for garment manufacturing.~~

~~1.4~~

1.1 This specification covers performance requirements for 100 % cotton woven denim fabrics, prior to the manufacture of jeans, casual apparel, work clothing, and outerwear.

1.2 This specification is not applicable to woven denim fabrics used as interlinings or protective clothing.

1.3 This specification covers the performance of denim fabric on rolls ready for garment manufacturing.

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 and health practices and to determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 *ASTM Standards:*

D 123 [Terminology Relating to Textiles](#)

D 434 [Test Method for Resistance to Slippage of Yarns in Woven Fabrics Using a Standard Seam](#)

D 1230 [Test Method for Flammability of Apparel Textiles](#)

D 1424 [Test Method for Tearing Strength of Fabrics by Falling-Pendulum Type \(Elmendorf\) \(Elmendorf-Type\) Apparatus](#)

D 3107 [Test Methods for Stretch Properties of Woven Fabrics Woven from Stretch Yarns](#)

D 3774 [Test Method for Width of Woven Textile Fabric](#)

D 3776 [Test Methods for Mass per Unit Area \(Weight\) of Woven Fabric](#)

D 3882 [Test Method for Bow and Skewness/Skew in Woven and Knitted Fabrics](#)

D 5034 [Test Method for Breaking Force and Elongation of Textile Fabrics \(Grab Test\)](#)⁴ [Test Method for Breaking Strength and Elongation of Textile Fabrics \(Grab Test\)](#)

D 7022 [Terminology Relating to Apparel](#)

2.2 *AATCC Standards*²:

Test Method 8 Colorfastness to Crocking: AATCC Crockmeter Method

Test Method 16 (Option E) Colorfastness to Light: Water-Cooled Xenon-Arc Lamp, Continuous Light

Test Method 61 Colorfastness to Laundering, Home and Commercial: Accelerated

Test Method 109 Colorfastness to Ozone in the Atmosphere Under Low Humidities

¹ This ~~test method~~ specification is under the jurisdiction of ASTM Committee D13 on Textiles and is direct responsibility of Subcommittee D13.61 on Apparel. Current edition approved June 10, 2000. Published September 2000.

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² Annual Book of ASTM Standards, Vol 07.01.

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



Test Method 116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method
Test Method 135 Dimensional Changes in Automatic Home Laundering of Woven or Knit Fabrics
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:

16 CFR 16.10, Chapter II, Subchapter D—Flammable Fabrics Act Regulations³

2.4 Other Document:

Glossary of AATCC Standard Terminology²

NOTE 1—Reference to test methods in this specification gives only the permanent part of the designation of ASTM, AATCC, or other test methods. The current edition of each test method cited shall prevail.

3. Terminology

3.1 Definitions:

3.1.1 denim, n—a durable woven twill fabric, usually of all cotton or a blend of cotton and manufactured fibers, made from a variety of yarn numbers, and in various fabric weights, colors, designs, and finishes.

3.1.2 indigo dyed, adj—a condition of the yarn after being colored with a blue dye from the indigo plant or synthetic process.

3.1.3 jeans, n—pants or slacks made from denim fabrics.

3.2 For definitions of other textile terms used in this specification, refer to Terminology D123 and the Glossary of AATCC Standard Terminology.

3.3 Definitions of Terms Specific to This Standard:

3.3.1 heavy-weight, adj—fabric mass (weight) of 466 g/m² (13.75 oz/yd²) or greater.

3.3.2 light-weight, adj—fabric mass (weight) of 271 g/m² (8.00 oz/yd²) or less.

3.3.3 medium-weight, adj—fabric mass (weight) of 272 g/m²—465 g/m² (8.01 oz/yd²—13.74 oz/yd²).

3.1 For all terminology relating to D13.61, Apparel, refer to Terminology D7022.

3.1.1 The following terms are relevant to this standard: denim, indigo dyed, jeans, heavy-weight, light-weight, medium-weight.

3.2 For all other terms related to textiles, see Terminology D123. and the Glossary of AATCC Standard Terminology.

4. Significance and Use

4.1 Upon agreement between purchaser and supplier, 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 apparel made from these fabrics may find the product acceptable, even if it does not conform to all of the requirements in Table 1 or Table 2. One or more of the requirements listed in Table 1 or Table 2, therefore, may be modified upon agreement between the purchaser and the supplier.

² Discontinued; See 1998 Annual Book of ASTM Standards, Vol 07.01.

³ Available from US Government Printing Office, Washington, DC 20402.

TABLE 1 Performance Requirements

Characteristics	Requirements			Section
	Heavy Weight	Medium Weight	Light Weight	
Breaking Strength (Force), CRT:				7.1
Warp	801 N (180 lbf), min	578 N (130 lbf), min	356 N (80 lbf), min	
Filling	312 N (70 lbf), min	244 N (55 lbf), min	178 N (40 lbf), min	
Elmendorf Tear Strength:				7.2
Warp	51 N (11.5 lbf), min	35 N (8.0 lbf), min	18 N (4.0 lbf), min	
Filling	18 N (4.0 lbf), min	15 N (3.5 lbf), min	13 N (3.0 lbf), min	
Seam Slippage: (¼-in. Separation)	222 N+ (50 lbf +)	133 N+ (30 lbf +)	111 N+ (25 lbf +)	7.3
Skewness:				7.4
3 × 1 Twill, only		8 % ± 3 % (wtl) ^A		
2 × 1 Twill, only		4.5 ± 3 % (wtl) ^A		
Stretch (Warp Elongation) as agreed upon between purchaser and supplier				7.5
Width as agreed upon between purchaser and supplier				7.6
Weight as agreed upon between purchaser and supplier				7.7
Dimensional Change, % Laundering				7.8
Preshrunk (each direction)		4.0 % max,		
Flammability		Class I ^B		7.9
Flammability		Class I		7.9

^AWTL = with the twill line.

^BMeets federal regulations for wearing apparel. See 2.3.