



Designation: D 4112 – 02

Standard Performance Specification for Woven Umbrella Fabrics¹

This standard is issued under the fixed designation D 4112; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This performance specification covers woven fabrics comprised of any textile fiber or mixture of fibers to be used in umbrellas.

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

1.3 *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 1284 Test Methods for Relaxation and Consolidation Dimensional Changes of Stabilized Knit Wool Fabrics
- 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 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
 - 16 Colorfastness to Light
 - 22 Water Repellency: Spray Test
 - 23 Colorfastness to Burnt Gas Fumes
 - 35 Water Resistance: Rain Test
 - 109 Colorfastness to Ozone in the Atmosphere Under Low Humidities
 - 116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method
 - 129 Colorfastness to Ozone in the Atmosphere Under High Humidities
 - 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 Transference 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:

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 fabrics for umbrellas shall conform to the specification requirements in Table 1.

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.

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 April 10, 2002. Published June 2002. Originally published as D 4112 – 82. Last previous edition D 4112 – 95a (2001).

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.