



Designation: D 4118 – 01

Standard Performance Specification for Women's Woven Coverall, Dungaree, Overall, and Shop Coat Fabrics¹

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1. Scope

1.1 This performance specification covers woven fabrics, composed of any textile fiber or mixture of textile fibers, to be used in the manufacture of women's coveralls, dungarees, overalls and shop coats.

1.2 This performance specification recognizes two levels of wearing severity relative to performance requirements for these fabrics.

1.3 This performance specification is not applicable to woven fabrics intended for use in the manufacture of industrial-protective clothing.

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

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 determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

D 123 Terminology Relating to Textiles

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

D 2261 Test Method for Tearing Strength of Fabrics by the Tongue (Single Rip) Procedure (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)³

D 2724 Test Methods for Bonded, Fused, and Laminated Apparel Fabrics

D 2905 Practice for Statements on Number of Specimens for Textiles

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

2.2 AATCC Test Methods:⁴

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

96 Dimensional Changes in Laundering of Woven and Knitted Textiles Except Wool

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 Chromatic Transference Scale.

2.3 Federal Standard:⁵

16 CFR, Chapter II—Consumer Product Safety Commission Subchapter D—Flammable Fabrics Act Regulations

2.4 Military Standard:⁶

MIL-STD-105D Sampling Procedure 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.

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 Discontinued; see 1994 *Annual Book of ASTM Standards*, Vol 07.01.

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

⁵ Available from Superintendent of Documents, Government Printing Office, Washington, DC 20402.

⁶ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

3. Terminology

3.1 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 of Terms Specific to This Standard:*

3.2.1 *Type I apparel*—designed for generally heavy work. It may be subjected to severe exposure to breaking and tearing stresses indoors or out.

3.2.2 *Type II apparel*—designed for light work or leisure activities. It may not be expected to undergo severe physical stresses.

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

4. Specification Requirements

4.1 The properties of fabrics for women’s coverall, dungaree, overall, and shop coats 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 4118 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 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.

TABLE 1 Specification Requirements

NOTE 1—Class for colorfastness and DP rating is based on a numerical scale of 5 for negligible or no color change, color transfer, or wrinkle to 1 for very severe color change, color transfer, or wrinkle. The numerical rating in Table 1 or a higher numerical rating is acceptable.

Characteristic	Requirements	Section
<i>Breaking strength (load)(CRT):</i>		7.1
Type I	222 N (50 lbf), min	
Type II	178 N (40 lbf), min	
<i>Tongue-tear strength(CRT):</i>		7.2
Type I	11 N (2.5 lbf), min	
Type II	9 N (2.0 lbf), min	
<i>Dimensional change</i>		
Pressing and Finishing (DP fabrics)	2 % max	7.3.1
Laundering (DP fabrics)	2.5 % max	7.3.2
Laundering (non-DP fabrics)	3.0 % max	7.3.2.1
Drycleaning	2.5 % max	7.3.3
<i>Colorfastness:</i>		
Non-Indigo Dyed		7.4.1
Indigo-Dyed		
Burnt gas fumes—2 cycles:		
Shade change, original fabric	Class 4 ^A , min	Class 4 ^A , min
Shade change, after 1 laundering or drycleaning	Class 4 ^A , min	Class 4 ^A , min
Laundering:		7.4.2
Shade change	Class 4 ^A , min	Class 2 ^A , min
Staining	Class 3 ^B , min	Class 2 ^B , min
Crocking:		7.4.3
Dry	Class 4 ^C , min	Class 3 ^C , min
Wet	Class 3 ^C , min	Class 2 ^C , min
Perspiration:		7.4.4
Shade change	Class 4 ^A , min	Class 3 ^A , min
Staining	Class 3 ^B , min	Class 3 ^B , min
Light (20 AATCC FU) (xenon-arc)	Step 4 ^A , min	Step 4 ^A , min
Drycleaning		
Shade change	Class 4 ^A , min	Class 3 ^A , min
Chlorine Bleach	Class 4 ^A , min	Class 4 ^A , min
Non-chlorine Bleach	Class 4 ^A , min	Class 4 ^A , min
Fabric appearance (see 7.5.1.1)	DP 3.5 min	DP 3.5 min
Flammability	pass	pass

^A AATCC Gray Scale for Color change.

^B AATCC Gray Scale for Staining.

^C AATCC Chromatic Transference Scale.