



Designation: D4118 – 23

Standard Performance Specification for 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 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, 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

D123 Terminology Relating to Textiles

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)

D2262 Test Method for Tearing Strength of Woven Fabrics by the Tongue (Single Rip) Method (Constant-Rate-of-Traverse Tensile Testing Machine) (Withdrawn 1995)³

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)

D7022 Terminology Relating to Apparel (Withdrawn 2022)³

2.2 AATCC Test Methods:⁴

TM8 Colorfastness to Crocking: Crockmeter

TM15 Colorfastness to Perspiration

TM16.3 Colorfastness to Light: Xenon-Arc

TM23 Colorfastness to Burnt Gas Fumes

TM61 Colorfastness to Laundering: Accelerated

TM96 Dimensional Changes in Commercial Laundering of Woven and Knitted Textiles Except Wool

TM116 Colorfastness to Crocking: Rotary Vertical Crockmeter

TM124 Smoothness Appearance of Fabrics After Repeated Home Laundering

TM132 Colorfastness to Drycleaning

TM135 Dimensional Changes of Fabrics after Home Laundering

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 AATCC 9-Step Chromatic Transference Scale.

2.3 Federal Standard:⁵

CFR 1610 Standard for Flammability of Clothing Textiles

2.4 ANSI Standard:⁶

ANSI/ASQ Z1.4 Sampling Procedure and Tables for Inspection by Attributes

¹ This performance 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 The last approved version of this historical standard is referenced on www.astm.org.

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

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

⁶ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

NOTE 1—Reference to test methods in this performance 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 For definitions of textile terms used in this performance specification, refer to the individual ASTM and AATCC methods and to Terminology **D123**.

3.2 The following terms are relevant to this standard: Type I apparel; Type II apparel.

3.3 For terminology related to apparel, see Terminology **D7022**.

3.4 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 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 performance 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 D4118 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.

TABLE 1 Specification Requirements

NOTE 1—Grade for colorfastness and SA 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 :</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	Indigo-Dyed	
Burnt gas fumes—2 cycles:			7.4.1
Shade change, original fabric	Grade 4 ^A , min	Grade 4 ^A , min	
Shade change, after 1 laundering or drycleaning	Grade 4 ^A , min	Grade 4 ^A , min	
Laundering: ^D			7.4.2
Shade change	Grade 4 ^A , min	Grade 2 ^A , min	
Staining	Grade 3 ^B , min	Grade 2 ^B , min	
Crocking: ^D			7.4.3
Dry	Grade 4 ^C , min	Grade 3 ^C , min	
Wet	Grade 3 ^C , min	Grade 2 ^C , min	
Perspiration: ^D			7.4.4
Shade change	Grade 4 ^A , min	Grade 3 ^A , min	
Staining	Grade 3 ^B , min	Grade 3 ^B , min	
Light (20 AFUs)	Step 4 ^A , min	Grade 4 ^A , min	7.4.5
Drycleaning			
Shade change	Grade 4 ^A , min	Grade 3 ^A , min	7.4.6
Sodium Hypochlorite Bleach	Grade 4 ^A , min	Grade 4 ^A , min	7.4.7
Non-chlorine Powdered Bleach	Grade 4 ^A , min	Grade 4 ^A , min	7.4.8
<i>Fabric smoothness appearance (see 7.5.1)</i>	SA 3.5 min	SA 3.5 min	7.5
<i>Flammability</i>	Class 1	Class 1	7.6

^A AATCC Gray Scale for Color change.

^B AATCC Gray Scale for Staining.

^C AATCC 9-Step Chromatic Transference Scale.

^D See **Note 7**.